AMERICAN VETERINARY REVIEW.

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EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, Sept. 15, 1903.

In my last chronicle I wrote about the great loss sustained by the death of Prof. Nocard, and in so doing I endeavored to record the concise history of the professional life of one who occupied the well-deserved highest rank that had ever been reached by any veterinarian. I spoke of the sad ceremony of the funeral, etc., but how much more could I not have said, had the space required been available. At this late hour yet I must be brief, but must write a few words more.

The general scientific press, the veterinary journals all over the world, have had in their obituary articles but words of praise for our great friend, and it is well for Prof. Leclainche to make the veterinary world acquainted with all that is said of Edmond Nocard; and I thank him for the information that I find in the *Revue Generale* of September 1.

A great and lasting proof of admiration is already given to the memory of Nocard by the authorities of the town where he was born. One of the avenues of that town is to be named after him, and will be known as "Boulevard Edmond Nocard"; and, besides this, a commemorative plate is to be placed on the house where he was born, with the date of his birth (January 29, 1850).

To us Americans, this public manner of appreciation of the great work of a man has, I believe, seldom been resorted to, and,

yet, there are many names in America which might in this way be transmitted to posterity.

But there is one way by which I trust American veterinarians will express their admiration for the work of Nocard. It is this: There is no doubt that the profession of France will erect a statue to the memory of him who has had as many friends as he had admirers. At the time of my writing this, the question has not yet been agitated; but it will, and I think it would be becoming to the veterinarians of the New World to take now the necessary steps to contribute to the funds required for such statue. The REVIEW, I am sure, would be ready to act as an intermediary for this undertaking.

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By the death of Nocard the supporters of the unity of tuberculosis have no doubt lost one of their most powerful advocates; but, nevertheless, Koch's new theory has yet many other opponents, and among them, perhaps, Prof. Arloing occupies the most prominent place. In the *Journal de Zoötechnie* of May last there appeared a paper on the subject from him, which throws an important light on the question and deals a terrible blow to the duality idea.

First stating that some ten years ago everybody seemed to agree on the unity of tuberculosis of mammalia, there were but few exceptions to the generally accepted idea. Then came doubts, resulting from the works of Theobald Smith, R. Gaiser, Frothingham, and Dinwiddie, which were soon followed by the experiments of Koch and Schutz and the announcement of their conclusions that both tuberculoses (that of man and that of animals) were different, because human bacilli, contrary to those of bovine origin, did not affect cattle, no matter by which channel they were introduced into the organism—conclusions which rested, according to the subject selected in the experiments on the *non-inoculability of human tuberculosis to herbivorous animals and to swine.*

At the Congress of London the announcement made by Koch, as our friends know, was far from receiving much ap-

plause. At the seating many authorities came forward to refute the arguments advanced by the great German bacteriologist, and afterwards, when the scientists had returned to their laboratories, many set to work to confirm or to upset the new theory, which, if correct, would upset the great work organized against the disease. Arloing was one of the speakers at the Congress against Koch; he was one of the first to start experiments; he has recently published the result of his observations. He has made quite a number of them, inoculating human tuberculosis to donkeys, goats, cattle, sheep and swine; then bovine tuberculosis to cattle, sheep, goats; and again equine tuberculosis to cattle, sheep, and goats, altogether 46 experiments, viz.: 33 with human and 13 with animal bacilli.

The description of those experiments, the results obtained, the explanations of the reasons Koch's were different, all are clearly presented by the learned director of the Lyon School, and the conclusions arrived at are down to the point in question. They are as follows:

"(1) Human tuberculosis is perfectly inoculable to cattle, and sometimes, with certain ways of inoculation, it gives rise to lesions having the character of bovine tuberculosis;

"(2) Human tuberculosis has not always the same virulence, and a given bacillus does not manifest its strength with the same degree in herbivora of different species;

"(3) In some cases the human bacillus is as virulent as one of bovine origin; while in others, on the contrary, the virulence is so attenuated that it may seem absent, specially if tested on bovine subjects;

"(4) Human bacilli with attenuated virulence, after intravenous injections, do always give rise, in the lungs at least, to lesions that are visible under the microscope and which sometimes progress rather rapidly toward fibrous degeneration;

"(5) It is then impossible to decide on the unsuccessful result of an inoculation without having made a microscopic study of the lung and of the principal parenchymatous organs;

"(6) The variations in the virulence of the bacilli explain

the facts apparently negative which brought Koch and Schutz to the notion of duality;

"(7) The unity of human and bovine tuberculosis must be accepted, and all prophylactic measures imposed by it, specially as far as the use of milk goes, must be reënforced."

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It would seem that the subject of melanosis has been exhausted and that the literature on it has been completed long ago. Nevertheless, a veterinarian, Mr. Peyronny, has thought that it yet deserves some attention, and to this effect has selected for the subject of a thesis at his examination for the degree of M. D., that of the "Melanosis of the White Horse," which brings out points of interest which are recorded in the *Revue Générale de Medéciné Vétérinaire.*

For the author, melanosis of the white horse is an affection special to this animal, always mild in its appearance and mode of development, rarely and that in exceptional cases becoming malignant, having special characters, and which, although it is very common, is still very imperfectly known. If melanotic tumors, fibromas, simple benignant growths, and sarcomas that develop rapidly, or, again, melanotic carcinomas, etc., have been well studied, the melanosis of the white horse seems to have been neglected, and yet it is a morbid entity perfectly distinct from the other so-called melanotic neoplasms.

The observations were made upon 69 animals—white, or of the various shades and kinds of greys—and *in all* this melanosis has been found, at post-mortem, at the *points of selection*, and where in all *it is constantly present.* These points are: the internal face of the aponeurosis of the rhomboideus muscle, on a level with the anus, in the roof of the pelvic cavity and on the psoas muscles, or, again, in the connective tissue of the retro-masseterine region.

The inner face of the aponeurosis of the rhomboideus muscle is always the seat of the melanotic deposits. At first, careful examination is required to detect it, as it is a simple slight puncta, existing single on one side, or is bilateral and symmet-

rical; gradually this increases, the points become tumors of small size, like a small lentil or a nut, to become again growths weighing 500 or 600 grammes or even 10 kilograms. In these conditions they have invaded not only the rhomboideus, but the great and small dentata and even the muscles of the vertebral grooves and the intercostal muscles.

If in many classical works the disease is always considered as serious, Dr. P. does not accept the severe prognosis which is generally advocated. For him, even with the different degrees which may be observed in proportion with the various conditions of the disease, the great general functions of the organism are very seldom interfered with by its presence, and it is only when the neoplasm has assumed very large dimensions that it may mechanically interfere with the usefulness of the animal. Indeed, melanosis does not shorten life; animals affected with it have lived to old age, 28 years and more. But, of course, in cases of external melanosis, the prognosis becomes more serious when by the discharge of the ulcerated neoplasm the animal has become an object of repulsive disgust.

Can an animal affected with melanosis be used for butchery? Yes, says the Doctor, providing the deposits are small and can be removed. No, if the melanosis is generalized. Of course, in this case the meat would be unsalable. At any rate, white horses sold to butcher always command a lower price because of possible melanosis.

The subject of the topography of the disease, of the microscopic examination, of the lesions, etc., completed the thesis, which received a note of commendation from the examiners.

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Some time ago I received a letter from the States asking for information upon a medical preparation which an agent was trying to introduce on the American veterinary market. It was said to be a French preparation, extensively used among veterinarians here, etc. I have also received a notice from the gentlemen who prepared the drug. But obliged to leave Paris for cause of ill-health, I have not been able to give the subject

the attention it deserves. It will be for my return to the great city.

In the meanwhile, I may say a few words of another preparation which I have heard of; which I saw presented at the *Société Pratique*, and is reported excellent in its qualities, whether used externally or internally.

I have always been very shy of those preparations, cures for everything, from a scratch to an attack of anthrax, but "Tannoform" (that is its name) begins to be so much spoken of; it finds its way into the advertising columns of some veterinary journals, even in our REVIEW, that I looked into the matter, and besides the praisings of a few, I find in the *Progrès Vétérinaire* an article which speaks rather extensively of it, and which I resume in a few lines. It is Mr. P. Bitard who records his experience by saying: "We have only praise for the happy effects obtained with tannoform, used either alone or associated with collodion, vaseline, lard, burnt alum, corrosive sublimate, chloroform, etc., in the treatment of solutions of continuity of all kinds, specially synovial wounds and those with loss of substance. It is essentially a deodorizing agent, having cicatrizing properties of great value, and which never gives bad results." That sounds well, does it not? As proof Mr. Bitard mentions the case of a half-bred Norman mare, which had a deep puncturing wound of the foot, severe lameness, fever, etc. She was operated, the wound washed with sublimate solution, dressed with tannoformed collodion, equal parts, and later with tannoform powder only; rapid recovery. Another in a bull with punctured wound of a fore foot, great lameness, two fistulous tracts, operation, tannoform, recovery in three weeks. A mare has a large laceration in the arm-fold, healed in ten days. A steer, which has a fracture of the horn extending to the frontal sinus; there is great inflammation and suppuration; antiseptic dressing with lysol, then tincture of iodine, and finally tannoform. A slut, operated for enormous tumor of the mammæ, healed in twenty days. A colt, with synovial wound at the anterior extensor of the phalanges, in the fold of the hock, with enormous swelling and excessive lameness. A bull has in front of the

sheath an abscess as big as a man's head. A cow in labor has laceration of the uterine neck and deep abrasions of the vagina. A mare has large wounds of both knees with escape of synovia, etc., etc., all benefitted and rapidly cured by the use of the tannoform.

The internal use has not been sufficiently experimented with to permit Mr. Bitard to be as positive in the results, although he has tried it, and if the effects he has obtained in cases of hæmaturia, of hæmorrhagic cystitis, of chronic enteritis, etc., are encouraging, let us wait to conclude. At any rate, our friends can see by the above that the preparation may after all deserve attention.

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As long as I am on the subject of drugs, let me call the attention of our surgeons to a new method of local anæsthesia, which is spoken of by Dr. E. Foisy, in the *Journal de Medecine*, of Paris, and which I believe of good practical value.

According to the author, the adjunction of a few drops of adrenaline to a solution of cocaine will give a real and lasting anæsthesia. This method is applied principally for the anæsthesia of inflamed tissues. The solution which has given the best results is made of solution of cocaine, 1-200, 10 c.c.; solution of chlorhyd. of adrenaline, 1-1000, 10 drops. This solution can be prepared in advance, sterilized in sealed tubes, or made when wanted, by adding to the 10 grammes of the cocaine solution (1-200) the 10 drops of adrenaline. Thus prepared, the solution can be used all at once or in parts, according to the number, the extent, the depth of the incisions to be made.

This formula, however, can be modified when the solution is to be used, when very great incisions are to be made or large morbid tissue to be removed, such as extraction of tumors, anthrax, adenitis. Then 20 to 25 c.c. of the solution of cocaine are mixed with 13 to 15 drops of adrenaline.

For deep abscesses, amputation of small tumors, this method presents undoubtful advantages to the others.

Let us try it!

Is this true? P. B. is responsible for it in the *Progrès Vétérinaire.*

It is in Holland that the "Automatic Physician" is said to be born. In most of the railroad stations stands the automatic individual, made of zinc, handsomely painted. His body is perforated with so many little slots, having the name of a disease or only of a symptom. You put a penny in the slot, pull a ring and the prescription for the ailment is brought out. Celerity, discretion and cheapness!

But the practice of the automatic fellow is not going to last. The physicians of Holland, the true ones this time, have found the farce injurious and have formed a syndicate to cut short the business of the zinc fellow, who went so far in a few instances to hit right, give sound advice, and cure his patient. They will no doubt succeed. But is it new after all? Our memory may be deficient, but I fancy that some years ago the same trick was done in America. I believe in some show in the West. But there it remained only a joke, and did not need a syndicate of physicians to kill it. A. L.

THE ARMY VETERINARY SERVICE.

Nine months ago, under the suggestion and guidance of Dr. Olof Schwarzkopf, 3d U. S. Cavalry, the REVIEW opened a department for the use of army veterinarians and it was given to them absolutely and without reservation, for the discussion by them of the serious problems which have confronted them for the past twelve or fifteen years. The profession of the country, through the Army Committee of the American Veterinary Medical Association, has worked valiently and unselfishly to better the condition of their brethren in the Army by endeavoring to secure for them better pay and a more dignified and honorable position in the service. Their persistent and strenuous efforts have been an object lesson and an example of pure devotion to a cause, as they deplored the almost menial basis upon which their profession in the Army stood. Their efforts were worthy of more success than they achieved, though their gratuitous

labors were just as creditable to them, and deserving of as much appreciation as though they had been fully successful. Their work, however, was not without good results. The first efforts at moving an imbedded stone are always the most irksome; when once it has been gotten into motion, its momentum can be maintained with half the exertion necessary to start it. Their combined strength gave the first impetus by securing for the army veterinarian the pay and allowances of a second lieutenant of cavalry, and, while the next push failed to send it any further, it is just possible that too much was attempted at that time. Many believe that if, under the favorable circumstances then existing, and with the masterly generalship of Drs. Salmon and Huidekoper, a more modest demand had been made upon Congress, their request would not have incurred the determined opposition of the War Department, without which any reasonable bill would have become a law. A bill asking for modest "rank" would, therefore, in our judgment, have been passed by both houses of Congress and secured the approval of the President. No criticism is aimed at the promotors of that measure; in fact, the REVIEW used what influence it could command to further it, and would do so again. But it feared then, and knows now, that the very audacity of our demands was bound to incur the disapproval of the head of the Department of War. Nothing daunted, the profession is just as willing to undergo the same labor to help our colleagues and our profession in the Army; but we are more sober now, and we know that our demands must be modest if we hope for success. We will get what we can now, and when the times are again propitious, we will take in a little more "slack," and thus keep on "hitching" until we reach the point which we should occupy in the Army of the United States.

The position of the army veterinarian is much better today than it was five years ago, particularly when there is a fair prospect of a dignifying commission. If this were not true, there would not be the really large number of recent graduates seeking admission to the service, in times when the Govern-

ment is clamoring for just such men in the Bureau of Animal Industry; when States are importuning our colleges to send them young men of qualification to fill really desirable positions upon boards of health and live-stock sanitary commissions; when private practice is more alluring than it ever was, guaranteeing handsome incomes for capacity and energy. The life of an army veterinarian is apparently attractive to them, and we have much faith in the ultimate success of the effort now being made to elevate the service, because we know that the character of the new acquisitions will not rest content until they have secured it. Whether it is to be a second lieutenancy of cavalry at first, to be followed later on by something better, we know not; but that the army veterinarian will become a commissioned officer, with all the advantages conferred by such rank, we are sure. How long this will be delayed depends largely upon the veterinarians occupying the army positions now.

Dr. Schwarzkopf has, we think, simplified the question very much in his communication in the October REVIEW; he has divested it of all mystifying superfluities, and looked it squarely in the face; he has undeceived those who clamor for high rank and who put forth but little effort to secure it, or even the humblest improvement upon present conditions; he has appealed to his colleagues to unite in a reasonable memorial to the War Department, and has shown the futility of all efforts where this power is ignored. The REVIEW is still willing to give its pages freely for the preparation of the plans to accomplish this.

What are the army veterinarians going to do about it? Have they completed their discussion of their plan of action? Are they preparing their memorial or round robin to the War Department? Is Dr. Schwarzkopf being supported in his laudable undertaking as he deserves? The REVIEW does not know. It only hopes the subject inaugurated with so much spirit in the March number will not be allowed to lapse into a state of "innocuous desuetude," and hereafter to hear the army veterinarian complain of this condition.

PROSPERITY FOR THE VETERINARIAN.

Every sign points not only to the continued prosperity of the veterinarian, but to an increase in the demand for his services. In every field that has opened up to him in the past quarter of a century, each one of which he has filled with consummate ability and dignity, he is firmly entrenched, and his value is recognized to greater degree as familiarity with his intrinsic worth extends. Private practice has always been the magnet which attracted the most recruits to our ranks. This field, however, has in recent years been menaced by mechanical innovations, but more seriously, perhaps, by rumors of threatened innovations, which have had their effect in breaking that enthusiasm which is essential to material progress in any profession or calling. It chills the ardor and blunts the ambition of those within and deters the better class of those without in embracing the study of veterinary science as a life-work. A young man, equipped with a good classical education, looking over the field for a calling upon which to bestow his energies and abilities, must have in the beginning as an incentive an abiding faith in the permanency of his selection, as well as good prospects of its expansion. When rumors continuously greet him that the foundation of his chosen calling is liable to be destroyed through its extinction as a prominent factor in human activity, he cannot enter upon the task of perfecting himself with any degree of confidence and enthusiasm.

It appears to us that anyone who can read between the lines, or who can see through the mist that has been obscuring our horizon, that our chief patient is secure from molestation and will remain the most useful and best beloved servant and companion of man for all time.

His latest rival, the automobile, has been with us sufficiently long to demonstrate its qualities and the place which it is destined to fill as a means of pleasure and of practical and profitable utility. For the former purpose it has proven a unique and popular diversion—a fad which has not yet run its course, and which will for some time to come continue to endanger the lives

of drivers and pedestrians and to offend their olfactory sense. As an adjunct to the transportation outfit of business establishments it is closing its career with a celerity rather unexpected. One after another of the large business houses of our cities which adopted the automobile in the hope of improving their delivery facilities, have dropped it, after much vexatious and expensive effort, thoroughly convinced that it is "unreliable, prohibitively expensive, and altogether a nuisance" (to use the expression of one firm which gave them a long trial and lost over $35,000 in doing so).

It may, in our judgment, then, be not seriously considered as a rival of the horse for practical utility or for lasting and genuine pleasure, and we are left to contemplate the fact that the veterinarian's sphere as a ministrator to the permanent occupant of the field of local individual transportation, aside from the other and numerous capacities of the educated veterinarian in the realm of sanitary medicine, is as secure as is the estate of man.

But the public will no longer tolerate with complacency, incompetency or anything short of the highest accomplishments in the veterinarian of the future. Veterinary science must give that public scientists, men of character and capacity, and it behooves us to prepare ourselves for this certain demand. Our national association, as the leader in all professional progress, and our colleges, which have ever shown the greatest loyalty in following its lead, can be relied upon to supply this demand.

ST. LOUIS IN 1904.

The Executive Committee of the American Veterinary Medical Association have promptly decided upon the Exposition City for its forty-first annual convention. There are very many reasons why the choice is a good one: First, its central location is beyond criticism, and will bring out the largest number of veterinarians ever gathered together in this country; second, the Louisiana Purchase Exposition being in full blast at that time, will make the trip to the meeting doubly pleasant and

profitable; and, third, the National Organization, never having met within the boundaries of that commonwealth, which has furnished its membership roll with many of its best men, owes it to them to thus recognize their strength and loyalty.

The Association having adopted an amendment to its by-laws at Ottawa, advancing the time of its meeting one week, the dates of the meeting will be August 16, 17, 18, and 19, 1904.

THROUGH the courtesy of Dr. W. L. Williams, we present our readers, and particularly those who were so fortunate as to have been present at the last meeting of the New York State Veterinary Medical Society, with a brief account of the cases presented at the clinic held in connection with the meeting. The greatest value of such a report resides in the results obtained from the surgical demonstrations, and we purposely withheld detailed allusion to them until results could be stated in conjunction with the list of operations.

OUR practical readers should not overlook the prize competition announced by Dr. Wm. Dougherty in the October REVIEW for a short essay on the forging horse. The conditions are stated in his letter, the time limit being December 1. The first paper, already received, will appear in the December number, to be followed by others in as quick succession as possible. We trust there will be many competitors, as the condition is interesting, while our literature is especially silent upon the etiological factors.

HORSES WORTH $1,000,000,000.—For the first time since 1892 the value of the horse stock of the United States is now estimated at more than $1,000,000,000. Notwithstanding the fact that bicycles, automobiles and electric street railways have come into the field in the last few years, there are more horses than ever before and they are worth more money. The exact figures, vouched for by the Secretary of Agriculture, are:—16,557,373 horses, valued at $1,030,705,959.

ORIGINAL ARTICLES.

"TALLIANINE."

THE FIBRIN-FERMENT CONTENT OF THE BLOOD *IS* PROPORTIONAL TO ITS RICHNESS IN LEUCOCYTES.

By Drs. H. Stassano and F. Billon,

Physiological Laboratory of the Sorbonne.

Extract from the Transactions of the Biological Society of France, April 25th, 1903.

While the rôle of the leucocytes in the coagulation of blood is indisputable, it is nevertheless only vaguely known, and for this reason we have investigated the question as to whether there exists any ratio between the number of leucocytes circulating in the blood at the moment of blood-letting and the content in fibrin-ferment of the escaping blood.

This research is decidedly a difficult one if the animals used be small. The prolonged struggling, the narcotics or anæsthetics used, the repeated blood-lettings on the same animal, all these exercise, as a matter of fact, no inconsiderable effect upon leucocytosis. These disturbing influences, however, may be avoided by taking large animals as the subjects of experiment, and this plan we followed out, using as a rule only cows which weighed over 1100 pounds.

In order to induce variations in the number of leucocytes circulating in the blood, we made use of a new product, "Tallianine," which *provokes, when injected intravenously, an abundant leucocytosis*, an effect which is very rapid in small animals, but slower in the horse or cow. In the note appended to the present communication, we give a few illustrations of the effect exercised by "Tallianine" upon the leucocytes. (See "Studies upon Leucocytosis," appended.)

The blood used for our leucocyte counts was in each case withdrawn direct from the jugular by means of a hollow needle. In estimating the content of the blood in fibrin-ferment, we used

the process described by Mr. Arthus, although in some cases we found it of greater advantage to use a reagent composed of a mixture of ascitic fluid with fluorised blood-plasma.

Regarding the coagulating power of the blood, we made in a preliminary series of experiments comparative observations upon the plasma obtained by centrifugation of the samples of blood we desired to compare. These samples were made incoagulable by the addition of fluoride of sodium in similar proportions and at the end of the same period (15 minutes) after the exit of the blood from the vessels. In a second series of experiments we used the plasma produced by the spontaneous coagulation of various samples of blood. In order to compare the changes in the coagulating power of the blood with the variations in the number of leucocytes, we prepared test-tubes, each containing the same quantity of reagent (2 cubic centimetres of fluorised plasma or of the mixture of ascitic fluid with fluorised serum); then with these tubes we set up as many parallel series (each series consisting of six tubes) as there were blood-sera to be compared. In each of these series the quantities of blood-sera added to the reagent were respectively 2 drops, 1 drop, $\frac{7}{10}$, $\frac{5}{10}$, $\frac{3}{10}$ and $\frac{1}{10}$ of a drop. These tubes were thereupon either left at laboratory temperature, or placed in the incubator at 99° F., and the coagula which formed were compared. The clearest results were obtained when the comparisons were made about 18 hours after the beginning of the experiment in the case of the tubes left at room temperature, and five to six hours for those kept in the incubator.

We experimented first with two cows. The blood of the first contained at the beginning of the experiment 4,250 leucocytes in the cubic millimetre; the blood of the second, 8,750. Seven hours after the injection of "Tallianine," the blood of the first cow showed 9,250 leucocytes and the blood of the second, 21,500.

The series of tubes exposed to the action of the fluorised plasma of the first cow and the serum of the second, demonstrated clearly that the blood withdrawn at the beginning of the

experiment contained much less fibrin-ferment than that obtained during the hyperleucocytosis. In other words, the size of the coagula thrown down by the addition of the blood taken at the beginning of the experiment was always correspondingly smaller than the size of the coagula precipitated by the blood belonging to the period of hyperleucocytosis. Thus it seems clear that an increase of the coagulating power of the blood runs parallel with an increase in the number of leucocytes. The proof becomes even more definite if, instead of comparing the size of the respective coagula, we compare the tubes with respect to the point of time at which the coagula form. We then find that in the tubes belonging to the period of hyperleucocytosis the coagula develop several hours ahead of those representing the beginning of the experiment (the reagent being ¼ fluorised plasma with ¾ ascitic fluid).

In a third series of experiments upon a heifer, in which hyperleucocytosis was induced by bleeding, we were able to demonstrate again the same parallelism between the number of leucocytes and the fibrin-ferment content of the blood. In this animal, weighing about 600 pounds, we drew off first two litres of blood from the jugular, and the leucocytes rose from 12,000 to 13,500 in the cubic millimetre. After a second bleeding of five litres, the number went up to 20,750, and remained at that figure for some time, even after a third bleeding of three litres. The coagulating power of the blood withdrawn we found to be each time correspondingly increased.

On the other hand, the increase in the fibrin-ferment content of the blood resulting from the hyperleucocytosis induced by the injection can hardly be attributed to the direct action of the product injected, for, as a matter of fact, we were able to demonstrate in a series of control experiments, that blood withdrawn two hours after the injection (when the number of leucocytes was as yet increased only 1250 in the cubic millimetre) possessed a coagulating power scarcely, if at all, greater than that shown by the blood withdrawn at the beginning of the experiment. Further than this we ascertain that the coagulating

power of the blood returns to the normal when the hyperleucocytosis disappears.

We believe, therefore, that we are justified in concluding that the content of the blood in fibrin-ferment is in direct ratio with its richness in leucocytes.

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STUDIES UPON LEUCOCYTOSIS.

NOTE BY DRS H. STASSANO AND F. BILLON.

The product mentioned in the preceding article as having been used by us in the experiment described to induce an increase in the number of leucocytes was one which has been introduced into veterinary therapeutics by Doctors Pichard and Cotty. It is obtained by the action of ozone upon a terpene-bearing volatile oil, the action being arrested at a point when the latter has absorbed a quantity corresponding to four volumes of ozone. This product was kindly furnished us by Messrs. Brigonnet Pére & Fils & Gaubert, who manufacture it for commercial use at La Plaine St. Denis, under the name of "Tallianine."

The product is entirely harmless. We have injected it intravenously in massive doses without noticing the least subsequent disturbance. *Its most marked characteristic, physiologically—the one which in all probability will account, at least in part, for its curative properties—is to rapidly increase the number of leucocytes in the circulating blood.* In the rabbit, it causes in a short time an intense, but fleeting leucocytosis. The following observation copied from our records seems to us to be a very typical example of this form of leucocytosis in small animals.

January 18th, 1902.—Rabbit, weighing two kilogrammes, given 2 cubic centimetres of "Tallianine" in the vein of the ear.

In large animals the product induces the leucocytic action more slowly. The following observation is an example:

March 31st, 1902.—Ten cubic centimetres of "Tallianine" were injected into the jugular of an old horse.

Time of Examination.	Number of Leucocytes in the Cubic Millimetre of Blood.
Before the injection	13,500
20 minutes after	9,750
40 " "	45,750
1 hour after	37,500
1 hour and 20 minutes after	38,750
2 hours and 20 minutes after	20,000
2 " " 40 " "	12,250
3 " after	11,250

Time of Examination.	Number of Leucocytes per Cubic Millimetre.
Before injection	5,250
15 minutes after	6,500
45 " "	7,250
1 hour and 40 minutes after	8,000
2 hours " 10 " "	9,500
5 " " 30 " "	5,000

The following observation, the subject of experiment in this case being a heifer, is a much better demonstration of the degree of leucocytosis induced in large animals by the product with which this communication is concerned, viz., "Tallianine."

Time of Examination.	Number of Leucocytes per Cubic Millimetre.
Before the injection	12,750
5 minutes after	9,000
30 " "	12,250
1 hour after	14,500
1 hour and 30 minutes after	14,000
2 hours after	20,250
2 hours and 30 minutes after	18,750
3 " " 30 " "	17,500
4 " " 30 " "	18,500
5 " " 30 " "	21,750
6 " " 30 " "	19,250
7 " " 30 " "	19,000
10 " after	24,500
11 " "	25,000
12 " "	23,000
13 " "	18,750
30 " "	14,250
52 " "	12,500

November 16th, 1902.—The animal, weighing over 600 pounds, received by the jugular vein 300 cubic centimetres of "Tallianine," the injection being made in eight minutes.

There exists a certain ratio between the amount of the product injected and the degree of the hyperleucocytosis induced. The proof thereof will be seen if one compares the results of the preceding observation with those of the following double observation. We possess, besides, in our books of records, other observations which prove the existence of this ratio as a fact.

December 17th, 1902.—Two cows, one, weighing about 1200 pounds, received by intravenous injections 50 cubic centimetres of "Tallianine"; the other, weighing about 1150 pounds, received 20 cubic centimetres "Tallianine."

Time of Examination.	Number of Leucocytes per Cubic Millimetre.	
	1st Cow 50 c. cs. "Tallianine"	2d Cow 20 c cs. "Tallianine."
Before the injection, and a bleeding of 200 cubic centimetres in each cow	8,750	4,250
Five minutes after the bleeding.	12,500	6,750
Injections of "Tallianine" given:		
2 hours after the injection . . .	10,000	5,000
4 " " " " . . .	12,250	5,500
6 " " " " . . .	13,500	5,500
7 " " " " . . .	21,500	9,250
9 " " " " . . .	8,250	6,750

The hyperleucocytosis, of which the above are a few examples, concerns, both in small and large animals, the polynuclears. In the majority of cases the increase reaches as high as the third of the normal ratio between these leucocytes (the polynuclears) and the mononuclears.

CORRECTIONS.—Dr. J. S. Butler, Secretary Minnesota State Veterinary Medical Association, writes under date of Oct. 6, as follows: "On page 554 of the September REVIEW, under head of Maladie du Coit, by Dr. Foster, instead of 1250 animals inspected, it should read 730 inspected; 79 destroyed should read 65 destroyed; 194 castrated, should read 114 colts and stallions castrated."

ECHINACEA IN VETERINARY PRACTICE.

By P. A. Fish, M. D., M. D. V., Ithaca, N. Y.

A Paper read before the 13th Annual Meeting of the New York State Veterinary Medical Society, at Ithaca, Sept. 15-16, 1903.

Echinacea angustifolia, De Candolle, is an herbaceous plant, the root of which sends up from year to year a slender, but sometimes a rather stout, stem, two or three feet in height, bristling with hairs. It is an indigenous plant growing chiefly in the Western States, from Illinois to Nebraska, and southward through Missouri to Texas, thriving best in rich prairie soil. It is abundant in Kansas. The generic term, *Echinos*, meaning hedgehog or sea urchin, refers to the spiny, hedgehog-like fruiting head; while the specific name angustifolia originates from the Latin words *angustus* (narrow) and *folium* (leaf), contrasting this species from the other forms of echinacea. It is quite distinct from *Echinacea purpurea*, Moench, which is a taller plant with wider leaves, growing in the Eastern States from Pennsylvania west. *Echinacea angustifolia* is the narrow-leaved variety and blooms from June to August. It belongs to the natural order compositæ and the root is the part used in medicine.

Synonyms.—Purple cone flower, cone flower, nigger-head, black sampson, the latter term also being employed for *E. purpurea.*

History.—Dr. H. F. C. Meyer, of Pawnee City, Nebraska, (1870), seems to have been the first among physicians to have used echinacea as a medicine. He used it in a secret mixture with wormwood and hops, and called it "Meyer's Blood Purifier." Among his claims for it was its antidotal action upon the poison of various insects, and particularly that of the rattlesnake. Dr. Meyer stated that he even allowed a rattler to bite him, after which he bathed the parts with some of the tincture, took a dram of it internally, and laid down and slept, and upon awakening all traces of swelling had disappeared. In 1885 and 1886 he sent specimens of the plant to Mr. C. G. Lloyd, who

identified it as *Echinacea angustifolia* of De Candolle. In 1886 Dr. Meyer communicated to the late Professor John King his uses of the drug as he had employed it for the preceding sixteen years. Among other things, success for his remedy was claimed in boils, internal abscesses, ulcerated sore throat, old ulcers, nasal and pharyngeal catarrh, various fevers, trichinosis, acne, eczema, and also colic in horses. Later use of the drug has to some extent substantiated many of the almost incredible claims of the introducer; for the conditions for which it was recommended might well be due to vitiation or dyscrasia of the blood, the very field in which echinacea has been found to be most useful.

Professor King took an active interest in the drug and after extensive experiments became convinced that it possessed great merit. It is due to Professor King more than anyone else, perhaps, that the drug became generally used among the eclectic and other practitioners.

It is said that much of the root collected has little medicinal value. The root collected in the marshes and lowlands east of the Mississippi is of this negative quality. The best quality is obtained from the prairie lands of Nebraska. Professor Lloyd's experience is that few drugs vary more in quality than crude echinacea. The root, if of good quality, when chewed, gives at first a sweetish taste, later becoming acrid and pungent, and finally leaving a persistent tingling sensation, followed by a peculiar numbness of the tongue and fauces, apparently intermediate in character between that produced by aconite and cocaine.

Chemical Composition.—According to the investigations of Professor Lloyd, the plant contains minute quantities of an alkaloid, which is devoid of color, and unimportant so far as its medicinal qualities are concerned. In his earlier investigations he failed to find the alkaloid. He finds that "the characteristic principles of the root are those substances linked to an acid organic body of a resinous character, nearly, if not quite colorless, and possessing, in an exalted degree, the persistently acrid

qualities of echinacea—so intensely that it is distressing to the taste, even in very small amount, when pure. The stinging sensation affects the tip of the tongue for hours. But small quantities of it are present, even in the best root—less than ½ to 1 per cent."

The writer, experimenting upon some tablets of the powdered extract of echinacea, was unable to find any evidence of the presence of an alkaloid, glucoside or neutral principle, but did find a resin of which about 70% was soluble in ether.

Preparations.—Fluid extract, tincture, and echafolta. According to Professor Lloyd, the best menstruum for the fluid extract and tincture is alcohol 4 parts and water 1 part. Both preparations mix well with water, and there is no very appreciable precipitation. Echafolta is described as a purified preparation of echinacea, free from coloring matters and extraneous substances, such as chlorophyll, extractive, and other "plant dirt." Another preparation put out by Battle & Co., of St. Louis, is known as Ecthol, and is said to contain the active principles of Echinacea and Thuja.

Dosage.—Echinacea is comparatively non-toxic. In human medicine the dose of the fluid extract and tincture is given at ¼ to 1 drachm; echafolta 4 to 8 minims every one to four hours. In veterinary practice the writer has used the powdered root in doses ranging from 2 to 8 drachms for horses and cows.

Physiologic Action.—The action of the drug upon the mouth has been variously described as resembling aconite, pyrethrum and xanthoxylum. The tingling sensation persists for some little time, even after the throat has been gargled. The flow of saliva is promoted. According to Ellingwood, diaphoresis soon occurs and a continuation of the remedy stimulates the kidneys to increased action. "All of the glandular organs seem to feel the stimulating influence and their functional activity is increased. The stomach is improved in its function, the appetite increases, the food is more perfectly digested, the bowels operate better, and absorption, assimilation and general nutrition are materially improved. It encourages secretion and excre-

tion, preventing further auto-intoxication, and quickly correcting the influence in the system of any that has occurred. It stimulates retrograde metabolism, or tissue waste more markedly than any other single remedy known. It influences the entire lymphatic system. Anæmic conditions improve with increased nerve tone." Professor Webster recommends it as a stimulant to the capillary circulation.

The writer has confirmed upon himself the eliminative action of echinacea with respect to urea. Determinations were made upon the afternoon urine for six days, and the average amount of urea obtained for this period. A dose, of 5 grains of the powdered extract of echinacea in tablet form, was then taken three times a day before meals for six days and urea determinations taken as before. The following cut is introduced for the purpose of comparing the two series of determinations. The lower curve represents the period when the drug was not taken ; the upper is the echinacea curve.

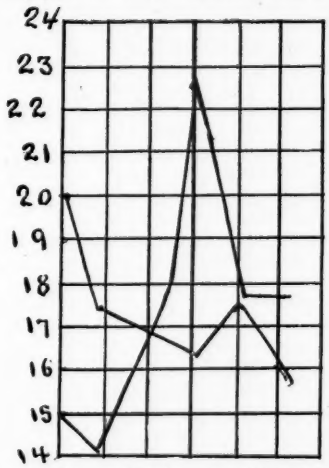


FIG. 1. The lower tracing represents the number of grammes of urea per 1000 c.c. of urine for each of the six days when the echinacea was not taken (Normal curve). The upper tracing represents similar condition when echinacea was taken.

The results showed that during the use of the echinacea there was an average increase of 2.83 grammes of urea per 1000 c.c. of afternoon urine, per day.

Some experiments were also tried upon kittens to determine

the toxicity of the drug, the fluid extract of echinacea and the preparation known as echafolta being used. Kittens weighing 2 and 2½ pounds were employed ; one being dosed with two drachms of the fluid extract in six drachms of water ; the other with two drachms of echafolta in six drachms of water. (The equivalent dose for a horse weighing 1000 pounds would be nearly 1 gallon of the drug). Within five minutes there was incoördination of movement and within twenty minutes both cats were unable to walk. There was some dilatation of the pupils during the early stages. After forty minutes emesis occurred, in the kitten which had received the fluid extract, and after this had occurred improvement took place, although lack of coördination persisted for some time. The following day this kitten was apparently as normal as ever. Emesis did not occur in the kitten receiving echafolta ; she soon became quiet and lay upon her side as if asleep, but with her eyes open. The conjunctiva was less sensitive than normal and the pupils were somewhat contracted, but would still respond to light stimulus, although slowly. The appearances suggested a condition of profound narcosis or stupor, all of this occurring within two hours. The kitten remained in this condition all of the following day ; but on the third day was found to be in her normal condition again.

Later the experiments were repeated under the same conditions, except that three drachms of each of the preparations were administered. The general symptoms were as before. On the second day the heart and respiration were much depressed, the body cold and the pupils contracted. The pulse fell to 56 and 58 ; respirations 10 and 12 and the temperature fell to 70.8 in one kitten and 71.8 in the other. The kitten receiving the fluid extract (there was no emesis this time) died toward the close of the second day. The kitten receiving the echafolta was found dead and in rigor on the morning of the third day. The post-mortems showed no marked changes aside from some congestion of the lungs, and the stomachs moderately distended with gas, some liquid, food and mucus were also found in the stomachs.

The suspicion arose that the effects above described might be due to the alcoholic menstrua in which the drugs were dissolved. Further experiments were therefore tried. The alcohol was driven off by evaporation until an extract of echafolta was obtained which was five times more concentrated than the normal drug. One drachm of this concentrated extract was mixed with 15 c.c. of distilled water and 5 c.c. of alcohol, and administered to a kitten as in the previous experiments. Compared with the first experiment, this kitten received 2½ times more of the echafolta, but with the alcohol driven off. There was apparently no effect during the 2½ hours she was under observation. The experiment was repeated upon a second kitten with similar results.

In another experiment, the alcohol was driven from the fluid extract of echinacea, until the resulting extract represented a concentration three times greater than the original fluid extract. Two drachms of this concentrated extract, mixed with 20 c. c. of water and 5 c.c. of alcohol, were administered to a kitten as in the case of echafolta; within ten minutes the kitten became uneasy and emesis occurred; four minutes later there was profuse salivation. An hour later the kitten was apparently normal again. In another experiment four drachms of the concentrated echinacea were administered in the usual way. Profuse salivation soon occurred and there were spasmodic movements of the body suggestive of attempts at vomiting. Within twelve minutes emesis took place and after this had occurred improvement set in and the kitten soon returned to its normal condition.

In still another experiment, one drachm of the powdered extract of echinacea, in tablet form, was mixed with four drachms of normal saline solution. This was divided into two portions and injected subcutaneously at four-minute intervals. Four minutes after the last injection, emesis occurred; no untoward symptoms occurred; the kitten continued to purr, but was not so playful as before. Three days later it was observed that abscesses were forming at the places of injection; in a day or two the abscesses broke and some sloughing of the tissues occurred.

Some days later the kitten was found dead, probably from infection. It should be stated that antiseptic precautions, in making the injections, were purposely omitted, as it is claimed by some that the drug possesses antiseptic properties. The result would indicate that the drug, without its alcoholic menstruum, has no inhibiting action upon the growth of bacteria.

To complete the observations, it remained to note the effects of alcohol and compare them with those produced by echinacea and echafolta. Three drachms of 95% alcohol diluted in water were administered to a kitten. Within ten minutes she showed signs of staggering. Incoördination of movement was not so marked and did not appear so promptly as when the drugs were used. She could still walk, but with difficulty, one hour later. The pupils varied in their condition, sometimes being contracted and at others dilated. The next day the cat was very much improved and soon recovered.

It should be pointed out that a three-drachm dose of the alcohol did not prove fatal, whereas the same dosage of either of the drug preparations caused the death of the animals on the second or third day. The narcotic effects were not so quickly produced nor so profound with the alcohol as with the drugs. The absence of effects from the drugs when deprived of their alcoholic menstrua may be explained by the fact that the drugs were practically insoluble in water and were therefore very slow in being absorbed; whereas, in the alcoholic menstruum, the drug was readily and quickly absorbed, so the whole bulk of the drug quickly entered the system and produced pronounced effects. With the drug in its insoluble form it entered the system so slowly and in such small amount that the effects were not noticeable.

Echinacea in tablet form, crushed and suspended in water and administered to frogs in proportionately large doses, produced quick narcotic effects from which the frog gradually recovered.

Human Therapeutics.—As a therapeutic agent echinacea or echafolta can be used internally and externally at the same time.

It is difficult to classify the drug under a single title. Some have referred to it as an alterative and as an antiseptic. The eclectic practitioners seem to agree in referring to it as a "corrector of the depravation of the body fluids."

It has been highly praised as a remedy for blood poisoning and changes manifested by a disturbed equilibrium of the body fluids, resulting in various tissue alterations exhibited as boils, carbuncles, abscesses, or cellular glandular inflammations.

It has been recommended for fevers resulting from the absorption of septic material, such as typhoid, puerperal, septicæmia, etc. It is regarded as a highly important remedy in uremic poisoning, diphtheria, various ulcerated and catarrhal conditions. Intestinal antisepsis, and aphrodisiac properties, when locally applied, are claimed for it. Satisfactory reports of its use have been given in appendicitis, erysipelas, spinal meningitis, cancerous growths, syphilis, tetanus, bites of poisonous animals and insects. The Sioux Indians have been reported as using the fresh root scraped and given freely for the bite of the rattlesnake with recovery in from two to twelve hours. Statements more difficult to accept are those in connection with rabies. It is said that in five or six cases, animals bitten at the same time as the patient, had developed rabies, and had even conveyed it to other animals, and yet the patient showed no evidence of poisoning, if the remedy was used at once. It is said that one case exhibited the developing symptoms of hydrophobia before the drug was used and that they shortly disappeared after treatment.

Veterinary Therapeutics.—Except for the reference, in the early part of this paper, to the use of echinacea for colic in horses, the drug has not been used in veterinary medicine, so far as the writer knows. The following cases seemed to be of the character for which the use of the drug was indicated, and it was therefore employed.

Case 1.—A small brown calf, weighing about seventy pounds, was brought to the clinic on account of loss of appetite, unthriftiness, and a peculiar grunt at the end of each expiration. Con-

stipation was marked ; some of the symptoms pointed toward impaction of the rumen, and there was some suspicion of pulmonary complications. For the first few days the calf did not improve. The constipation was quite resistant to treatment, although purgatives were administered at each end of the animal. Some echinacea was administered from the first. When the bowels were opened, echinacea in half-drachm doses, was the only treatment employed. The kidneys became active again (no urine had been observed for two or three days); the appetite became vigorous ; the expiratory grunt disappeared ; urination and defecation occurred freely, and the animal made an uneventful but satisfactory recovery. It is not unlikely that some auto-intoxication had occurred from the prolonged constipation with some respiratory complication.

Case 2.—A gelding, seven years old, weighing about 900 pounds, was brought to the clinic suffering from strangles. Pulse 48, temperature 104.4. A flaxseed poultice was applied to the intermaxillary swelling ; this was opened on the third day and about one-half ounce of pus escaped. One-drachm doses of powdered echinacea were administered from the outset, without other treatment. Within a week the pulse had fallen to 40 and the temperature to 100. The horse was discharged and no subsequent symptons appeared.

Case 3.—A Jersey cow suffering from fistulous withers. This cow had received treatment two months previously, and after four or five weeks had been sent home. Two weeks later she was returned, the fistula having broken out again, and her condition was such that it was thought best to give no further treatment, but to use her as a subject for dissection. While waiting for the dissection, the echinacea treatment was begun experimentally. Some necrotic tissue was removed from the tip of the scapula, and the fistula washed out daily with a solution consisting of one part of echafolta to twelve parts of water, and frequently some of the powdered echinacea was dusted over the wound. Internally two-drachm doses were given morning and night with the feed. A few days later the doses were raised to

one-half ounce, then to one ounce and for a short time she received two ounces at a single dose. The doses then dropped to one-half ounce until she was discharged cured. Upon inquiry, it was found that there was no recurrence of the trouble two or three months after her discharge. General improvement was noted soon after the treatment was inaugurated; her appetite increased and she began to put on flesh and there was general improvement in tone and vigor.

Case 4.—This case was reported to me by Dr. T. S. Childs, of Saratoga Springs, who used the drug in several cases of catarrhal fever "with more or less good results." The cases, however, were serious, and as the remedy was new and experimental he abandoned it in favor of his regular treatment. He writes, however, that he had one very bad case of the fever in which the echinacea was used throughout, with stimulants, and that it made a good recovery in a very short time.

Case 5.—Dr. J. B. McNeil, of Ballston Springs, writes me that he used echinacea in six cases of influenza and one case of purpura hæmorrhagica, the latter case being well advanced with some tissue disintegration. He gave one-drachm doses of echinacea every five hours and one-ounce doses of turpentine every six hours. He states that all of the cases made rapid recoveries, more especially the case of purpura hæmorrhagica, which he considered hopeless when he took it in charge.

Summary.—From the writer's observations it would appear that echinacea, in therapeutic doses, is a valuable agent for the elimination of morbid material from the system; that it exerts a beneficial effect upon the nutrition of the system, possibly through its eliminating action upon the waste material, thus causing a demand on the part of the tissues for new and better nourishment, as evidenced by a stimulated appetite. Its action may, in some respects, resemble that of an alterative in that it seems to stimulate and improve the body fluids, probably through the capillary and lymphatic circulations. While in some cases the effects may be reasonably prompt, in others the changes may be gradual and a long course of treatment be required.

Echinacea, while sometimes producing rapid and brilliant results, may, in other instances, be found wanting. Its variability in quality and its use for conditions in which it is not indicated may account for some of its failures. It would seem, however, from the evidence at hand, that with conservative use and due regard to failure as well as success, that echinacea should be a valuable addition to veterinary therapeutics.

AT the Chicago Horse Show, which was held the last week in October, Dr. M. H. McKillip acted as chief surgeon, with Drs. Frank Allen, Geo. E. McEvers, and Gerald E. Griffin as assistants.

VETERINARY INSPECTION AT ST. LOUIS EXPOSITION.—(1.) The Louisiana Purchase Exposition will appoint a veterinary surgeon for the Department of Live Stock, and such assistants as may be necessary. (2.) All animals before admission to the Exposition grounds will be examined and must pass a satisfactory veterinary inspection, as a safeguard against infectious or contagious diseases. (3.) The veterinary surgeon of the Department shall make daily inspection of the grounds, stables, stalls and pens and make each morning a report in writing to the Chief of the Department concerning the health of animals on exhibition, the condition of the grounds, stables, stalls and pens, and any other matters pertaining to the sanitary condition of the Department. (4.) Exhibitors will promptly report in writing to the Chief of the Department and the veterinary surgeon any symptom of disease in their respective exhibits. (5.) In case of the sickness or injury of any animal while on exhibition it shall be removed upon the order of the Chief of the Department from the Exposition grounds, or to a separate enclosure, where the exhibitor may direct the treatment of the animal. (6.) If the veterinary surgeon of the Department of Live Stock, or another, is employed to treat a sick or injured animal the exhibitor shall pay such veterinary surgeon a reasonable charge for his services, and other necessary expenses incurred. (7.) In case of doubt or protest as to the age of an animal in competition an examination shall be made by the veterinary surgeon, and should his report be that the age has not been correctly stated, or should any evidence submitted as to the animal's age be found unsatisfactory, said animal shall be barred from competition.—(*From the Official Rules and Regulations.*)

TREATMENT OF COUGHS IN DOGS AND HORSES.

By D. E. Buckingham, V. M. D., Washington, D. C.

In the practice of veterinary medicine there is often met a condition which produces cough without any other prominent symptom than the cough itself. In the spring and fall when coats are changing on both horses and dogs the weather is variable and sudden changes are the rule. Chilling of the body surface produces a congestion of the internal organs, and especially the bronchial membranes, which have so much to do with the warming of the inspired air.

These membranes are doubly susceptible, both on account of the internal congestion following the contraction by cold of the entire capillary circulation of the skin, and in the second place by local contact with the air. It would appear on first thought that the same agency of cold would contract and relieve the congestion of the mucous membranes, but functional activity overcomes such an anæmia, and we have a double congestion which is characterized by a dry cough in horses and a hacking cough in the dog, both of which are paroxysmal, and due to specific causes.

Exercise and increased lung activity incite this cough. It is noticed on starting from the stable and when the cold fresh air enters the trachea and lungs in increased volume. Dogs called from their kennels or sleeping places after a short bark of pleasure begin with a most distressing cough, rapidly repeated, and ending shortly in a retch and hack which brings up a little bit of phlegm, insignificant in amount, when compared to the exertion of bringing it to the surface. The scanty secretion never seems to loosen. The above is not a picture of the same cough in the horse. He cannot vomit or spit.

Such cases are hard to treat successfully, and not until I began prescribing Glyco-Heroin (Smith) have I had the kind of success which satisfies me. It goes without saying that these cases must be treated, first, by opening the primæ viæ with castor oil or saline cathartic. The first is preferable, as it will

have a more soothing effect on the larynx and tracheal membrane if in administering it should wander from the foodpath.

A number of coughing dogs and horses are being presented at my hospital for treatment, and the out-patient practice also includes similar cases, all of which are being treated with Glyco-Heroin, as it gives better results than any other combination of medicines we have heretofore used.

The cases herein cited are of special interest.

Case No. 1.—October 5 I was called to see Mrs. H.'s Black Hawk Morgan roadster "Star," in fine condition, with a heavy coat. He was suffering with a severe "cold" and high fever, accompanied by a deep cough, which pained him whenever it occurred. Temperature 105⅖°, respiration 37, pulse full and strong; diagnosis, acute catarrhal inflammation of the bronchial tubes. The patient was ordered upon hot bran mash, extra blankets, and leg bandages. Fever medicine was prescribed as follows:

℞	Quiniæ sulph.,	ʒ i
	Acid sulphuric (dil.) q. s.,	
	Tr. aconiti.,	f ʒ i
	Tr. belladonnæ,	f ʒ iij
	Spts. ether, nit., q. s.,	f ʒ viij

M. Sig:—ʒ ss t. i. d. in a little water.

One-half-ounce doses of Glyco-Heroin (Smith) were given every four hours for the distressing cough. The sequence of such cases is generally prolonged, persistency of the cough lasting for a week or ten days even after convalescence. I was surprised to note that when the horse's temperature was normal, as it was in about six days, his cough had also left him.

In this case the cough was very painful even when the mucus was excessive, and it is this bronchorrhœa that generally prolongs the convalescence.

Case No. 2.—A week later, and in the same stable, the coach horse "Peacock," a nervous active horse, just over his acclimation process after having been shipped from Buffalo, revealed a cough without any other sign of disease. This cough was the outcome of an acute bronchitis probably due to microbic infection from his stable mate "Star." One-ounce doses of Glyco-Heroin (Smith) were given t. i. d. Hot bran mashes, blankets and bandages were ordered and in less than five days my patient was free of cough and ready for work. Such results I have seldom been able to attain with the ordinary run of treatment.

Case No. 3.—The three-year-old collie dog "Prince" during his shedding time was presented at my hospital for treatment. He was distressed with a dry hacking cough which ended in the spitting of a little frothy mucus. The paroxysm of coughing was brought on by exercise, barking, or any slight exertion and there was an extreme irritability of the bronchial membrane. The patient was given a two-ounce dose castor oil and

Ammonii chlor., ʒ ij
Glyco-Heroin (Smith), f ʒ ij
M. Sig :— ʒ ss t. i. d.

In two days there was a marked change. Expectoration began, irritability was soothed, the cough changed in character and left the animal in about a week's time. This was a typical case of its kind. House dogs at shedding time are sent to this hospital in large numbers for the treatment of this form of dry bronchitis. All of them have a hard, dry cough which is made eight or ten times and ceases when a very small amount of phlegm is raised. If the stomach is full the retching ends in a vomit. My line of treatment is now a safe and sure one, as indicated above.

Case No. 4.—Mrs. Tyson's bull terrier puppy was exposed in a place where a distemper case had been, and on October 12 I was called to her house to see the dog. The vesicles of distemper had appeared on the abdomen and some had ruptured. The puppy was eating well, and showed but little sign of depression except a teasing laryngeal cough, which occurs so often in this disease and in pneumonia. It is simply a quick spasmodic expulsion of breath without the sound of coughing like "hah," which continues a long time if patient is aroused and kept from sleep. This irritability, which is no doubt due to the action of the specific organism of canine distemper and its toxine, on the peripheral ending of the recurrent laryngeal and bronchial nerves, is overcome in part by Glyco-Heroin (Smith) when combined with some preparation of quinine to inhibit the action of the bacillus of distemper.

The following was prescribed :

Syr. quiniæ (tasteless), f ʒ i
Glyco-Heroin (Smith), f ʒ iij
Sig. ʒ ss every four hours.

This is a sheet-anchor treatment and can be depended on to relieve cough, favor expectoration, and induce sleep in the rest-

less nervous form of distemper. In the above prescription there is a slight dietetic value in the syrup and glycerine which is worth considering in puppies of a few pounds weight. I have met several cases of late which respond nicely to this treatment when properly protected from the cold night air and other influences which so often operate against the very best efforts of the veterinarian. The puppy under treatment recovered with but a slight mucous cough.

In passing, I would warn young practitioners when considering drugs to be used as calmatives in cough, that morphine should not be considered in dogs and weak patients, as its bad after-effect and emetic action on the stomach does more harm than good. For a long time I have been in search of a drug that would do the sedative work of morphine minus its bad effects. Codein is too mild to depend on in acute cases, while heroin shows itself to be stronger and surer. Given a case of dry, spasmodic cough caused by asthma in an old house dog, if we use comp. syr. pinus alb. and add a little too much morphine to produce quiet sleep, the whole dose is apt to be ejected and our efforts to relieve are frustrated, unless we use the hypodermic syringe.

Case No. 5.—Tan terrier Gyp, eight years old, just beginning to show asthmatic breathing and cough, was brought to my hospital. The acute bronchitis which complicated her asthma was caused by incessant cough. This kept her invalid mistress awake at nights and as the lady and dog were inseparable and the former an invalid, it was very important to stop the cough.

I prescribed

Glyco-Heroin (Smith), f℥i
Sig:—Twenty drops every two hours.

She showed marked improvement after two doses and the first night slept better than she had for weeks. This improvement was maintained, and though a cure is out of the question, and the owners of such dogs refuse to kill them, it is necessary to keep these cases under drug influence as night approaches; and Glyco-Heroin (Smith) does the work better than anything I have ever tried.

Case No. 6.—In another and almost similar condition in an

old fox terrier I used the following with marked abatement of the symptoms, which were chronic :

Potass. iodide, ʒ ij
Glyco-Heroin (Smith), fʒ ij
M. Sig :— ʒ ss every three or four hours.

The potash salt acts remarkably well for awhile and should always be tried in long standing cases.

When the heart is feeble, as it often is in asthma, I use

Tr. digitalis, fʒ iss
Glyco-Heroin (Smith), q. s., fʒ i
M. Sig :— ʒ ss every four hours.

Case 7.—Mrs. Thombs, of Massachusetts Avenue, sent for me to see her sixteen-year-old fox terrier suffering with a most severe paroxysmal cough I have ever heard in a dog. Not more than ten minutes rest to the hour. She was so fat her skin was tight and shining in places. A great ruff of fat circled her neck, throat, and chest regions.

The mistress gave a history of feeding three times a day and plenty of it. Cough had been on about two weeks, but judging from similar cases I suppose it had been present in a slight degree for many months. She barked every time the door-bell rang and this brought on a coughing spell.

Without going into discussion of the pathology of asthma, suffice it to say, that the theory of fat infiltration into the bronchial tubes fits this case, hence I ordered her to my hospital where dieting and fasting could be carried out to perfection. A practice which is always impossible at home. I gave her a large dose of Glyco-Heroin (Smith) and the clinical report showed that she slept all night and coughed but seldom. Her generally restive spirit in the daytime was quieted and the characteristic propping of the body with fore legs and fear of lying down were both overcome by a pleasant soothing sleep.

The last three cases represent a constantly recurring class of dog patients which the city veterinarian is called upon to relieve, and though his efforts to cure are nil, yet he is required by kind, indulgent owners to persist in his efforts to palliate the disease. The old, fat, house dog, fed on candy and starched desserts, cream and the whole menu of the family table, has his death knell sounded by such feeding. Killed by kindness, like a horse with azoturia. Fox terriers, pugs and cocker spaniels are the breeds oftenest seen thus afflicted.

Case No. 8.—I was called to see the seven-year-old collie in good condition, but showing the first signs of bronchial constriction common to this age. He was suffering with an acute laryngitis and had been following the carriage during a cold snap, had cooled off by lying under the porte-cochere in a blizzard wind. A slight fever, rapid pulse and a strong desire to cough, were prominent symptoms. Patient sits on haunches and keeps chest propped up with fore legs, head well extended. I prescribed full dose of castor oil and Glyco-Heroin (Smith) in drachm doses, every four hours. This is a heavy dosage, but my patients are often rebellious to small repeated doses. I think it best not to aggravate them. Upon my visit next day, cough and chest symptoms had abated, the dog had slept considerably and the owner was well pleased. I ordered the medicine to be given three times a day, when upon my next visit the cough had left entirely and I discharged my patient.

It is taught by physiologists that there is reason and purpose in a cough; that it is reflex action following a stimulation of the peripheral nerve endings in the respiratory tract. This set of nerves may be irritated by a collection of mucus, by a simple congestion, by blood from hæmorrhage, by foreign substances and by respiratory air coming in contact with hypersensitive nerves. Each one of these causes is frequently noticed in daily practice. I believe in letting alone the simple mucus cough and that caused by hæmorrhage and apply my efforts to assisting nature.

The cases afore-mentioned are typical of a large number, and show the positive results of Glyco-Heroin (Smith).

Dogs bear relatively larger doses than their master, man. I give them enough to produce sleep, as it rests and relieves the patient, and every hour of freedom from cough is a step nearer recovery.

Horses often require as large a dosage as one ounce every two hours when there is an acute invasion of disease or a relapse in convalescence.

AT the recent Orange County (N. Y.) Horse Show, Drs. R. W. A. English, J. H. Schoonmaker, and J. F. De Vine were the inspecting veterinarians.

STATE BOARDS OF VETERINARY EXAMINERS.

THEIR RELATIONS TO THE TEACHING SCHOOLS, THE PROFESSION AND THE STATE.

By Thos. B. Rogers, D. V. S., and Wm. Herbert Lowe, D. V. S., of New Jersey.

Read at the Annual Meeting of the Veterinary Medical Association of New Jersey, at Trenton, January 8, 1903.

The establishment of State Boards of Examiners is a legitimate outcome of the growth of veterinary medicine, marking a period of its evolution. A passing glance at this growth will not be out of place. Veterinary medicine in the United States may well be said to have had its origin in Dr. Liautard's school in New York. The need of skilled veterinarians—a need only in part filled by foreign graduates settling in our country—was seen to be pressing, and the success of the early graduates of the New York school led rapidly to the establishment of veterinary schools and veterinary chairs in agricultural schools in many parts of the country.

The early schools were two-session schools, the sessions being about five months in length, and the teaching in some of them was very good indeed for the times. Soon, however, a number of schools sprang up, organized for gain or the professional aggrandisement of the teaching staff.

With the establishment of Harvard and the University of Pennsylvania schools, a new era was inaugurated. Three sessions and thorough instruction, with laboratory work of high grade, was their requirement for graduation, and their superiority over the best of the two-session schools became manifest. However, as the diploma of the poorest of the two-session schools was just as valuable as that of the high grade three-session schools, as far as conferring the right to practice was concerned, a result that might have been predicted followed; the students desiring an education took three sessions at a good school, those who desired but a "sheepskin," flocked to the two session diploma mill. All the general public asked was whether

the practitioner had a diploma, and a certificate purchased from the now defunct Philadelphia Veterinary College went about as far as a diploma from "Fair Harvard" with the general public. The inevitable result was large graduating classes from the diploma mills and small ones from the good schools. Even the good schools have had their troubles. A most mistaken parsimony on the part of those in authority decreed that the veterinary laborer in their vineyard was not worthy of his hire; that the receipt of a few hundred dollars per annum and the privilege of advertising himself as a "professor" was ample compensation for his devotion to science; that he must emulate the Edinburg reviewers in cultivating literature on a little oatmeal; indeed, that plain living and high thinking was good for him.

The result may be seen on the bulletin board of the school —"Professor Bones will not meet his class to-morrow," means that Bones, lucky dog, has secured a little private practice and that to-morrow he is going to attend to it, and so keep the wolf away from the Bones family door.

We don't blame Bones, but how about the class? Lacking the establishment of schools unhampered by questions of ways and means, the position of our best teaching schools has been a most unenviable one. Their teachers desired to do right, were anxious to further the higher veterinary education as far as in them lay, but the competition of the poor schools was too strong. A Western establishment advertises a class numbering nearly two hundred. Harvard has shut up shop. Under present conditions help cannot come from within, and it seems to the writers that the only salvation for the good schools is to be found in properly conducted State Boards of Examiners. In New Jersey we were in a bad way. New York and Pennsylvania had stringent State examination laws, and as we had none, it is only fair to presume—but we will leave it to your imagination.

What, then, may be hoped for from the establishment of these boards? What will be the effect on the teaching schools?

It will make them adopt a three years course. It will com-

pel them so to teach as to ensure their graduates a fair chance when they take the State examinations. Indeed, this much has been already accomplished.

Far more than this may, however, be hoped for if the State Boards, possessing the confidence of our legislators and BACKED BY A UNITED PROFESSION, are able to do their full duty.

It may be said with entire fairness, that the superior schools of to-day teach too much ; the poor schools too little. The latter will inevitably go to the wall under the law of the survival of the fittest, and so may be left out of account ; the thinly plastered teaching of the more pretentious, requires some consideration at our hands. How far is it possible in three sessions of eight months, reduced by holidays, examinations, missed lectures on the part of teachers, and missed recitations on the part of students to about twenty-one months of actual work—to teach anatomy, chemistry, physiology, biology, histology, horse shoeing, botany, pharmacy, materia medica, theory and practice of medicine and surgery, obstetrics, pathology, canine practice, toxicology, veterinary jurisprudence, meat and milk inspection, bacteriology, zoötechnics and therapeutics with any degree of thoroughness? Plainly, it cannot be done in a manner acceptable either to conscientious teachers or their pupils. Would it not be better to teach less and teach a few subjects more thoroughly?

There is a growing opposition to the further lengthening of the curriculum in any scientific or classical course so much so that the handwriting on the wall is unmistakable. The writers believe that they stand for the higher veterinary education as strenuously as any, indeed the skilled veterinarian must, like Francis Bacon, take all knowledge to be his province ; our contention is that he cannot take all the rudiments and *digest* them in twenty-one months. The result of the process is usually an attack of scientific dyspepsia from which the sufferer recovers tardily or not at all.

It is our opinion that this condition of affairs can be improved if the State Boards insist on a very thorough knowledge

of essentials. Another question arises in this connection—that of a period of pupilage prior to the college course. Really, it should be impossible for a difference of opinion to occur on this point. There is a *science* and *art* of veterinary medicine and it does seem as though no one in this day should claim that the best way to become an artizan is to listen to lectures and read books. As Huxley well says: "If a boy wants to learn the tea trade, we don't set him to read up botanical descriptions of the tea plant and books about China; we apprentice him where he can learn about tea practically, where he can smell, taste and handle it; any other course would result in his speedy bankruptcy."

No doubt all of us have felt the lack of much practical knowledge—knowledge of the very highest importance considered in its influence on our success during our early years of practice—only to be gained by doing things for ourselves and doing them repeatedly, and unfortunately it is just these things, the ability to handle animals, to give a ball, cast and tie up a horse, pass a catheter neatly, put a sling under a rampant horse, take off or put on a shoe, etc., by which we are judged by our clients and in which most of us are deficient during our early years of practice. We trust that this association will seriously consider this question of pupilage.

Another argument in favor of pupilage is that it would keep out of the profession many men who are entirely unfitted for it and who at present do not discover this absolute unfitness until they have wasted much time and money. A year or two of hard work with a practitioner would surely enable this class of men to see that their life work lay in other directions than in the practice of veterinary medicine.

The question of how to eliminate any part of the present college curriculum is a more difficult matter. What shall be left out or required as a condition for matriculation? It does seem, however, that there are certain subjects that could well be placed in a class by themselves, and that a knowledge of where to look to find information about them should be required rather than a parrot vocabulary of *words* regarding them. For example, you

may lecture until you are worn out to some men on the external conformation of the horse, but unless they have the eye you might as well fill the hour by talking about calico. Or, again, unless veterinary jurisprudence is taught by a very exceptional man, its consideration had better be divided between the chairs of pathology, chemistry, and therapeutics and a few well considered lectures, supported by cases from decisions of the courts on what does or does not constitute soundness.

The relations of State Boards to the State are, we think, very simple. The State in substance says, Give us men we can use in our business of controlling contagion and enforcing sanitary police regulations; and give us men who will not by their inefficient equipment cause unnecessary losses to stock owners and so diminish our taxables, and we don't care what school they come from, how long they stayed there, or what they did when they were there. We hope it is clear to all of you that it is not a function of the State either to practice veterinary medicine through its employés, to endorse particular methods or particular schools, or in any way to interfere with the freedom of the people to treat their stock as they please, provided their methods are not in contravention of the common or statute law. It is no part of the State's business to form a veterinary trust, though perhaps in these days of trusts they might allow the incorporation of one were the fees paid.

What are the relations of the State Boards to the profession? They certainly are not to be regarded as close corporations intent on keeping the number of practitioners at a minimum by means of too severe examinations. If twenty men present themselves to-morrow and answer the questions put to them, it is no concern of the State Board that their admission may crowd the profession in certain places; they must be given certificates to practice. It is the duty of the Board to take cognizance of infractions of the law, but these cases must be supported on sufficient evidence to secure a conviction. It is idle for a veterinarian to make an informal complaint and then kick because the Board didn't do something the kicker couldn't do himself.

It is the duty of the Board to keep the profession informed as to what schools best qualify their pupils for the examination, so they can intelligently advise intending students as to what school will afford them the best opportunities of study.

It is the duty of the Board to so demean themselves as to raise the standard of appreciation of the veterinarian among the law-makers and people of our State; and on the other hand we think it is the duty of the profession to give to the Board their hearty support and encouragement. We are doing this work under difficulties not altogether understood or appreciated, and we believe that we are doing it with only these purposes in view —to perform our sworn duty to our State and to elevate by every means which our position confers on us our beloved profession.

A REMARKABLE DISEASE.—Visitor at army stables in Arlington to old colored veterinarian: "Well, Pompey, what diseases are your horses troubled with most frequently?" "Well, sah, dee mostly I hab ter tek ulsters out ob deh feet, sah."—(*Lippincott's Magazine.*)

ABANDONS THE AUTOMOBILE.—The large firm of Saks & Company, of Herald Square, New York, who began business a little over a year ago, on a large scale with every up-to-date equipment, ignored the horse altogether in their delivery department, substituting the handsomest and latest automobiles. After using them for one year, they have been forced to give them up on account of "unsatisfactory service." The element of expense did not influence them, although it is said that each machine cost four times as much as a pair of horses to maintain. According to the New York *Herald* of Oct. 4, the firm has placed an order in Twenty-fourth Street for thirty high-acting delivery horses. - - - - A physician, who has just abandoned the automobile for horses, after four-years' vain trial, says each machine he has had (and he has purchased four) cost him from $1000 to $1200 a year to run it. - - - - Another physician, who owns a little electric runabout for "hurry" and night calls, using horses on his regular route, says it is costing him $700 a year for charging and breakage. From these and many other reports it would appear that the verdict up to the present is that they are both unsatisfactory and prohibitorily expensive for business purposes.

THE USES AND ABUSES OF CATHARTICS.

By R. L. Tucker, D. V. S., Providence, R. I.

Read before the First Annual Meeting of the Rhode Island Veterinary Medical Association, 1903.

Mr. President and Gentlemen:

I can assure you it is with extreme pleasure that I stand before you this afternoon with this paper in my hand, to be the first one to present a subject to you for your earnest discussion; and I hope you will listen with earnest appreciation and bear in mind, fellow-graduates, that this is the beginning, practically, of our foundation of the building that we surely are erecting—that is, the edifice of advancement of veterinary science in Rhode Island.

The subject in question is one that, in my opinion, is of great importance—"The Uses and Abuses of Cathartics."

The meaning of the word cathartic is, according to my interpretation of the term, any substance entering the animal economy, and by its absorption or by the irritation caused thereby, increases the alvine evacuations. Some, of course, act on different parts of the system, such as calomel and colocynth on the anterior part of the intestinal canal, and aloes on the small bowel, and the salines on the whole.

Now, gentlemen, this is simply a short preamble to what we are going to discuss. Of course, it is an understood fact between us all that we know when, and when not to use these medicines, but is it not wise for us to discuss between ourselves whether or not we do really know? For instance, we are called to see a so-called case of colic. The instant we see the animal, there runs a mass of symptoms through our minds that have coursed there so many times, ending up at the same old goal (colic); but is it a simple case or the misnomer, for, as you know that the term "colic" does not mean simply a group of abdominal symptoms producing pain therein, but it is a disease itself, just as much as enteritis or pneumonia are diseases. It is, gentlemen, an *itis* of the mucous membrane lining the

colon, and should be termed "colitis." But I am digressing a little.

One of the first things we jump for is one of the many anodynes placed at our command, and as a rule it is immediately followed by a large dose of aloes, or oil, or a combination. I have done it myself, but is this good treatment? Have we put ourselves to the necessary trouble of taking the temperature of our patient? Or have we examined the pulse to enlighten ourselves as to its condition? If we knew this was not quite as it should be, should we give a dose of aloes, to still depress it more? Here, gentlemen, is where lots of us make mistakes; we do not intelligently inquire into the merits of our patient. We must remember that the intestine of the horse covers a superficies of more than 4200 square inches, or about 90 square feet. This extent of intestine is covered by a highly vascular mucous membrane, filled with actively secreting glands and abundantly supplied with nerves. Such an immense extent of vascular mucous membrane necessitates great caution in the administration of cathartics to the horse, and we are taught by our instructors, as well as by our own knowledge, brought about by our study of the parts, that an animal should be prepared at least a day previous to this administration, and that the dose should be moderate; and still, in the face of all this knowledge and instruction, we daringly step up and administer a cathartic of from 6 to 12 drachms of aloes, or from 1 to 2 quarts of oil, and before even ascertaining the history of the case. Now, gentlemen, do you think this good treatment? We all know that there are cases of enteritis that start in very much like the so-called simple colics. They are, in fact, very much alike in aspect, and still we, without making a thorough examination, administer a cathartic, and in a few hours our patient does not improve, but grows boisterously worse, and we may at this time find him with a quickened pulse, high temperature, and we say within ourselves, "I wish that those 12 drachms of aloes were on the outside."

Then, too, there are cases of peritonitis in the dog, when the

animal has been exposed to dampness, or very cold baths. We immediately administer a cathartic on our first visit, and, like our old grandmothers of the past, say "If we can only get his bowels to move he will be all right." But we really mean that the medicine prescribed will give us a little longer time to make our diagnosis.

I have seen cases of acute pleurisy that at first sight I thought were colic, but, gentlemen, the moment I took the pulse and temperature, I looked further into the matter, which search taught me that pleurisy in its acute stages was not to be treated by a large cathartic dose of medicine.

On the other hand, how often are we called to use cathartics in cases of extreme plethora, when the owner thinks that the animal needs a cathartic to reduce his flesh? I saw a case some months back, where a veterinarian was called to see a horse that was 20 years old or more, not eating well, and he gave 10 drachms of aloes, with, of course, the physiological result, superpurgation and death. Now, this is against all rules and practice of veterinary science. It is the old fogy treatment of years ago. In other words, it is the method of the old "cow doctor."

There is also a custom very common among some of our local veterinarians of going to a drug store and having an aloetic mass made up with vaseline or some other such vehicle or base and carrying it with them, and at times, when they think a cathartic is necessary, they pick up a quantity of this semi-solid mass, a pill is made, and he is ignorant as to what amount he has administered. Here is room for damages on the plea of maltreatment, if any trouble should arise.

Do we ever stop and think over the physiological structure of our intestinal canal, and consider the therapeutic action of these powerful cathartics on its mucous surfaces? I was talking some time ago to one of our profession, and during the conversation the drug eserine was mentioned, and his statement was that he very seldom used it, only in cases of impaction. Now, this physician must have made a mistake; he really did not

mean to imply that he would give a dose of physostigma in cases where one of the intestines was full of fæcal matter. Remember, fellow surgeons, that this drug does not act, as most cathartics do, by irritating the intestinal mucous membrane, but by a nervous action, produced by stimulating the pneumogastric and eccentric nerves of the canal, thereby causing a blood pressure on them, and not only on them, but on the other organs controlled by this great nerve—the lungs, which is accountable for the extreme accelerated respiration we witness in cases where this drug is administered.

There is one other purgative medicine of which I wish to speak here, and which is often used as a last resort, especially in those cases which we call "coprostasis" or "straw colics," and that is chloride of barium. Here is a drug, the knowledge of which is very meagre, especially from a physiological standpoint. What is chloride of barium? It is a salt, either sulphate or chloride, made by subjecting the barium salt with muriatic or sulphuric acid; and is unfit for use on the animal economy. It is used principally among dyers and for photography, and is a deadly poison when entering the blood, as it is a pure and simple tissue destroyer.

There is also one other cathartic in general use among us, and that is the oil of the "bana crotoni," or croton bean. This one, especially of the drastic class, should be used with extreme caution. We know the escharotic effect it has when applied to the derma, and how much more so must be its action on the intestinal mucous membrane.

Now, gentlemen, we have arrived at a stage when we must look into the drugs that sometimes have a dual action, or, as some of our famous authors on medicine would say, the drugs that at times act directly opposite to their usual mode. We will look at that famous old medicine, the one that is our stronghold, the one that hangs to us as does the love of maternity, the one which is our sheet-anchor in hundreds of cases, which if administered a great many times indiscreetly, can do no harm. That drug is known to us as opium, or that obtained from the pres-

sage of the papaver somniferum, or garden poppy. Did you ever hesitate or stop to think that this great medicine, the sheet-anchor in colics, the high-water mark of enteritis, pleurisy, laryngitis, cystitis, peritonitis, and a dozen other inflammations, may become a cathartic under peculiar existing circumstances? Now, as to what these circumstances may be. For instance, we are called to see an obstinate case of constipation, when apparently all of the antispasmodics and cathartics have failed to relieve and subdue the pain, we are brought face to face with this drug, opium. We do not like to give it, because we are told that it decreases the mucous secretions of the bowel, thereby acting as a check on the alvine secretions, but our animal is suffering intensely, and we dare give the maximum dose, and in a few hours the spasm is relieved, the stricture of the bowel removed. The bowels assume their functional activity; in short, opium has not only acted as an antispasmodic, but as a cathartic indirectly. This is not theory, but results that have taken place in my personal practice.

In conclusion, I will say that I think that the uses of purgative medicines are often brought into abuse. They are often used when our diagnosis is in doubt to procure more time for the obscure symptoms to become more manifest, thereby causing delay during the convalescent stage. In other cases, too large doses are given. If a cathartic is necessary, except in extreme cases, and the animal has been intelligently prepared, from 6 to 8 drachms are quite sufficient. If in the canine part of our practice we made use of some of the simpler cathartics, such as the mercurous mild chloride, podophyllyn, sodii sulphate, I am sure that our patients would be much sooner relieved, as well as not have been submitted to the intestinal disturbances that are consequent upon the administration of the stronger ones.

I have occupied quite a little of your time, and as there will undoubtedly be some time occupied in the discussion of these few remarks, and some of us present have some distance to travel before reaching our homes, I will ask your permission to submit this recital to your friendly discussion.

CLINICAL OBSERVATIONS ON BURSATTEE OR SUMMER SORES.

By L. Van Es, M. D., V. S., Agricultural College, Fargo, N. D.

While engaged in practice in the southern part of Alabama, the writer had occasion to observe numerous cases of the above mentioned disease. It must be admitted, however, that the lesions found were not diagnosed as such until other writers had identified them with the rain-sores of India.

As met with in Alabama the disease is most common in mules, although cases in horses are quite frequent. Bursattee was not met with in other animals, while inoculation experiments in cats, dogs, guinea-pigs and rabbits yielded negative results.

The disease is most common during the warm season of the year and during this period it is most refractive to treatment. Cases are also met with during cold weather, but as far as the observations of the writer go they were all contracted during the summer.

The lesions of bursattee are entirely confined to the skin or mucous membranes and no cases were seen in which muscles or bones were involved. No special region of the skin seemed to be exempt, and where a mucous membrane was affected, it was always at places near the natural orifices.

How the disease is contracted is entirely a matter of speculation. The sores are readily transmitted from animal to animal. The writer has in mind two cases in which a simple wound (wire cut) served as an opening to the bursattee infection. These cases occurred in mules belonging to different stables in which bursattee cases were kept. In one case the infection could be traced to a post, against which the animal was in the habit of rubbing itself and which was quite bloody from the bursattee animal using it for the same purpose; the other case stood next to a mule affected with bursattee and the animals were in the habit of licking and biting one another.

Harness sores and saddle-galls also form a favorite foothold to the infection.

The teeth are the most efficient means, not only of transmitting the disease from animal to animal but also of transplanting the sores from one part of the body to another.

Bursattee sores at first make their appearance as a somewhat thickened, denuded, flat nodule of the skin. The nodule is ill-defined and in many cases is surrounded by an œdematous area; this œdema is of a transitory nature. The epidermis over the nodule becomes thin, smooth, shining and is moistened by a watery exudate. The appearance of the sore is ushered in by intense itching and the patients will make most desperate efforts to bite or rub the affected place.

By atrophic changes and by the biting and rubbing, the epidermis over the affected area soon disappears and a smooth, red, moist sore makes its appearance. The edges of this sore are indurated, while its base is also quite hard. In no case infiltration into the subcutaneous connective tissue was seen. Wherever this tissue be loose the growth is quite movable.

Closer examination will reveal the presence of hard, grayish white bodies, especially near the periphery of the sore. They vary in size from a small millet seed to a large pea and usually can be readily removed from the small cavities in which they are contained. In these cavities the small bodies or kunkurs, as they are called, are surrounded by a clear, thick, tenaceous fluid.

The kunkurs have their origin in the necrosis and subsequent calcification of small tubercle-like nodules, which are characteristic of the disease and consist of small round cells (leucocytes?) and perhaps also of the causative microörganism. The kunkurs and tubercles are placed in a stroma composed of the proliferated connective tissue of the dermis.

From the periphery the sore slowly enlarges as the neighboring skin becomes invaded. In some ulcers the growth ceases before it has reached a considerable size, while in others the area extends until cold weather checks further invasion. The

largest sore seen by the writer measured 9 x 6 inches.

During summer time there is absolutely no tendency towards healing and the sores, which become covered by a new epidermis during cold weather, invariably break down again with the advent of hot weather.

It is especially during hot weather that the greatest difficulties in treatment are encountered.

In the earlier experience of the writer the sores were treated by the common antiseptic methods, but very little was accomplished in that manner. Most cases failed to recover until cold weather brought relief. In other cases caustics were employed regularly, but while some improved or healed, the results as a whole were not satisfactory.

The caustics used at that time were nitrate of silver or corosive sublimate. Later on the necessity of more radical measures became evident and the knife was used whenever this could be done.

Even then, recurrences of the lesions were often observed in the wounds or scars. This, however, was due to imperfect excision. At that time the sore itself was removed and the indurated skin around it was left whenever it did not contain the characteristic concretions.

Frequent recurrence after removal showed that the sore proper must be given a wide berth. All thickened skin must be included in the piece to be removed; if this is not done, the sore is apt to return. In such cases the edges of the wound increase in thickness, kunkurs soon make their appearance and a second operation becomes necessary.

When the sore was removed from places in which the skin was loose and movable, like on the shoulders, neck or sides, healing, even of very large wounds, took place in a short time and with a minimum of scar tissue.

In regions in which the skin is intimately connected with underlying structures, the process of healing was tedious. This was especially the case when the ulcers were removed from the coronet, fetlock or metacarpal region. In three cases the ob-

servation was made that a wound, from which a sore was removed by a liberal margin, was re-infected by means of the tongue or teeth of the animal.

The writer's observations in that line lead him to believe that the cavity of the mouth harbors the causative agent long after the lesions have been eliminated from the skin.

The after-treatment of the wounds consisted in daily sublimate irrigations and the use of a boracic acid-iodoform or boracic acid-acetanilid dusting powder. In cases in which the healing process was sluggish, a strong solution of chloride of zinc was occasionally used.

In all cases the edges of the wounds must be very closely watched.

Owing to the prejudice of owners against radical measures, it was necessary to use other treatment in quite a few cases. Arsenious acid, sublimate, nitric acid were all given a fair trial, but with a small degree of success. For this reason other remedies were tried and it was found that formaldehyde had a surprisingly good effect in several cases. The remedy was used as the 40% solution of commerce or in a mixture of the latter with equal parts of glycerine.

The action of the chemical is very energetic and should be confined to the sore proper. This is best accomplished by smearing a layer of vaseline for a considerable distance around the place to be cauterized.

The sore should be thoroughly cleaned and freed from all scabs and crusts before the formaldehyde is applied. A bit of absorbent cotton on a glass rod was used to convey the liquid to the sore. The sore is simply moistened with it and left to itself. Within a few hours the surface will be covered by a dense, tough and thick scab. The scab is firmly united with the underlying structures and will usually remain *in situ* for a number of days.

The part should not be disturbed until the scab becomes loose or drops off, when the sore should be carefully examined and in case the edges show any induration whatever they

should receive a second application. The base of the ulcer seldom needs more than one cauterization except in cases of some time standing.

The formaldehyde treatment can be used to advantage in small growths or in cases in which excision is not practicable.

The writer remembers cases in which one application of formaldehyde was sufficient to exterminate small growths, so that by ordinary antiseptic treatment the remaining wound soon healed.

In cases of large sores, and especially when those are situated in regions in which the skin is loose and movable, the removal with the knife will yield the more prompt results.

On prophylaxis little can be said in the absence of a more full information on the etiology of the disease. It may, however, be well to keep affected animals to themselves, so that they cannot contaminate stables by rubbing their ulcers on walls, door-posts, etc. Some attention should also be paid to the harness, as it is very apt to convey infection.

Especial attention should be paid to the fact that the disease can be easily conveyed by the mouth. An infected animal will keep his oral cavity constantly supplied with infective material by means of licking or gnawing the ulcers, and any abrasion made by the teeth will form an excellent entrance-point for the organism, whether it be on the body of the animal itself or in others.

INTERSTATE ASSOCIATION OF LIVE STOCK SANITARY BOARDS.—At the annual meeting of this association, which took place at Denver, Col., Sept. 22-24, the following papers were read by veterinarians: "Cattle Mange or Scabies," Dr. J. C. Norton, of Arizona; "Anthrax," Dr. Leonard Pearson, Pennsylvania; "Glanders," Dr. C. P. Lovejoy, Illinois; "Foot-and-Mouth Disease," Dr. Austin Peters, Massachusetts; "Sheep Scab," Dr. Chas. G. Lamb, Colorado, and "Breeding and Immunizing Hogs from Cholera," Dr. A. T. Peters, Nebraska. Dr. J. C. Norton was elected President. Dr. D. F. Lucky, of Missouri, was Vice-President last year, and responded to the address of welcome. The next meeting will be held in St. Louis during September of next year.

POISONING IN THE DOG.

By Dr. Wm. J. Reagan, Paterson, N. J.

A Paper read before the Passaic County Veterinary Medical Association at Paterson, N. J., March 3, 1903.

We as veterinarians in the course of our daily practice are often called upon to treat cases of "poisoning in the dog," which are sometimes difficult to diagnose, the symptoms often resembling those of contagious or constitutional diseases. We are often called to treat dogs which the owner states has a bone in his throat, or has swallowed something foreign—stones, coal, sticks or other articles. Now, in making an examination of such cases it is well for the practitioner to be on his guard. The dog may, as the owner states, have swallowed a foreign body, or he may have a fish bone or other foreign body lodged in his throat, or between his teeth, but he may also be suffering from rabies, and one cannot be too careful of this point, or from a basilar meningitis, or a phrenitis, from a blow on the head, or obstruction of the bowels, or a simple gastro-enteritis. A correct diagnosis can only be made in these cases by exclusion, and even by this method the practitioner is often baffled by the many conflicting symptoms of the case.

When called upon to treat a dog with symptoms of gastro-enteritis, with or without paralysis, partial or complete, of the lower jaw or of the facial muscles, I first of all examine the eyes. In rabies there is a wild unnatural look, the pupil of one or both eyes is or are dilated; they are generally contracted in lesions of the brain, other than rabies.

The condition of the eyes, the peculiar hoarse howl (half howl, half bark), and the tendency to bite and snarl in an unreasoning way, are strongly indicative of rabies. In dumb rabies the lower jaw may be, generally is, paralyzed, but this is not diagnostic; it may also be paralyzed in a disease of the brain other than rabies, and also the animal may show a tendency to swallow sticks, stones, grass, earth, coal and other foreign bodies, but this sometimes occurs in gastritis, indigestion, and

numerous other morbid states. I next examine the buccal cavity. We may find extensive ulcerated patches, with considerable sloughing, with whitish blotches, scattered over the mucous membrane, and a reddening and tumefaction of the gums. This condition of the mouth is strongly indicative of corrosive poisoning, but we must not confound this condition with the wounds and lacerations of the mouth produced in the rabid dog by biting, or with lesions produced by fish, or other bones lodged between the teeth, or in the throat.

We should always look for these latter, having examined the mouth, in the meanwhile having interviewed the owner in regard to the history of the case, how long the dog has been sick, whether or not he has acted in an unnatural manner, whether he has been chained, or loose, or whether he has been bitten, whether or not he has been fed on meat that has been spoiled or tainted (ptomaine poisoning), whether he was first noticed to be sick at night or in the day time. Dogs are generally poisoned at night. I next examine the stomach and bowels through the abdominal walls. If there are foreign bodies of any size in the stomach or bowels we may detect them by palpation. In both toxic and non-toxic gastro-enteritis we have tenderness on pressure, but in toxic gastro-enteritis there is a peculiar tenderness of the abdominal walls. In poisoning by arsenic especially, and other corrosive poisons (arsenic is the one generally used on the dog), we have intense salivation, in marked contrast to what is seen in rabies, in which disease the mouth, contrary to general opinion, is generally dry. Also, in poisoning by arsenic, and the corrosive poisons, there is an intense desquamative nephritis and the urine is thick and albuminous. This condition of the urine we do not have in rabies. The urine is sometimes entirely suppressed in arsenical poisoning. In corrosive poisoning the appetite is generally gone, and, even if the dog takes food, it is immediately rejected; in rabies he sometimes eats ravenously and also retains the food. When we arrive at a diagnosis of corrosive poisoning the prognosis is grave.

If we are called in time, recognize the nature of the case, and give, in arsenical poisoning, the hydrated sesqui-oxide of iron with magnesia, or, in case of mercurial poisoning, albuminoids, eggs, etc., and combat the increasing weakness of the heart with stimulants; nothing irritating to the stomach must be used; brandy or whiskey are positive poisons in these cases, and will go far toward hastening a fatal result; opium and belladonna internally. Purgatives still farther irritate the corroded stomach and bowels. We may save the animal's life, but convalescence is a slow and tedious process, and the animal rarely recovers his original health and condition; he is generally subject to periodical attacks of gastritis.

On autopsy of cases that have died of arsenical or other corrosive poisoning we find an erosion of the entire gastro-intestinal mucous membrane, with hæmorrhagic infarcts, and petechia. We may find traces of Paris green when this poison has been used, but must not confound this green coloration with the chlorophyl of the grass that dogs sometimes eat. We often find a mechanical obstruction of the bowels due to the adhesion of the inflamed mucous membrane to masses of fæces. There is more often constipation than diarrhœa in these cases. We also have enlargement, sometimes enormous, of the liver in poisoning by arsenic and other metallic poisons.

In poisoning by strychnine, the only other drug generally used on the dog, the symptoms are characteristic, and cannot be easily mistaken. Death is rapid in a majority of cases, but if the practitioner be called in time, and the dose is not immediately fatal, we may give chloral, bromide of potassium, which are the best antidotes, conium or veratrum viride hypodermically, or inhalations of chloroform, and avoid all noise. Remove dog to a dark place, empty stomach, give tannin internally. In non-fatal cases the dog rapidly recovers, but he is exceedingly susceptible to the action of strychnia. On post-mortem there is one characteristic to be noted, and that is that the animal is in a position of extreme opisthotonos, with the back curved on itself, and the limbs rigidly extended.

In cases where the dog ingests pounded glass, we have traumatic gastro-enteritis with obstruction of the bowels nearly always. The animal shows a disinclination to move, but there is no salivation as a rule, and we have not the extreme agony that attends toxic gastro-enteritis ; there is an absence of high fever. We give emolients, linseed oil, olive oil, eggs, milk, opium to relieve the pain and quiet the bowels. Support the dogs' strength with broths if he will eat ; if not, with rectal injections of food. Where glass or other powdered material has reached the lower bowels we can sometimes reach the hard compact mass with forceps and so break it up and remove it piecemeal. I have done so in a number of cases, or use a forced enema of olive oil.

Prognosis in these cases is grave ; the patients generally die of perforation of the bowels or stomach with a consequent complication of peritonitis. On post-mortem we find hard gritty concretions in the bowels, sometimes find articles of glass in the stomach. It is rare that dogs are poisoned with phosphorus paste, put down to poison rats, but it occurs occasionally. We have gastro-enteritis without ulceration of the buccal mucous membrane. The smell of phosphorus on the breath, generally diarrhœa, stools clayish in color, and later a milky discharge. We give venice turpentine, eggs. Prognosis is grave. On post-mortem we find a wide spread fatty degeneration, enlarged liver and spleen, and a desquamation of the gastro-intestinal mucous membrane. " The stool in these cases is sometimes luminous in the dark."

DR. JOHN J. REPP, Secretary of the American Veterinary Medical Association, who severed his connection with the Iowa Agricultural Experiment Station at Ames, during the past summer, has located in Philadelphia, Pa., where he is engaged in private practice. Incidentally he is in the third-year class in medicine at the University of Pennsylvania, and will finish the course, in order to fit himself for advanced work in the field of comparative medicine. His address is 5249 Addison Street, where all correspondence in relation to association affairs should be addressed.

STENOSIS, FOLLOWING AMPUTATION OF THE PENIS.

By A. H. Ide, V. S., Lowville, N. Y.

A Paper read before the 13th Annual Meeting of the New York State Veterinary Medical Society, at Ithaca, Sept. 15-16, 1903.

The subject of the operation was a bay gelding, nine years old, suffering from paralysis and ulceration of the penis, of long standing. Amputation was advised and decided upon. The horse was prepared in the usual way, cast, and placed on his back. The mode of operation, taken from Liautard's "Operative Veterinary Surgery," page 573, and Williams' "Principles and Practice of Veterinary Surgery," page 635, was as follows:

The penis was secured with a ligature at its end and drawn out of the sheath. A catheter was introduced into the urethra and retained there by the passage of a ligature around the penis an inch or two above the seat of the intended incision. The ligature, which was of strong twine, was passed through the healthy portion of the penis with a stout packing needle in order to prevent slipping and withdrawal of the penis into the sheath. An incision of the skin covering the penis was made entirely around the organ and down to the cavernous body, with the precaution of drawing the skin slightly backward, so that when the amputation should be completed and the skin allowed to return to its position it would slightly overlap the stump of the penis. The cavernous body was then divided, carefully avoiding injury to the urethra. The urethra, thus reached, was dissected from its groove forward into the cavernous body for a length of 1½ to 2 inches; and, the catheter removed, the division across the urethral canal completed the amputation.

The removal of the diseased tissue being thus effected we had before us the stump of the cavernous body, almost dry, the hæmorrhage having been prevented by the upper ligature, which secured a good hold and a good view of the mutilated organ.

The urethra was then slit on its inferior border on the median raphé and both flaps turned upward and brought into contact by interrupted sutures with the skin, which had been so

divided as to overlap the stump. These sutures are made close to each other of strong silk, or catgut, the result being that the stump of the penis carries at its lower margin a slit of from one to one and a half inches in length. The hæmorrhage was slight.

The after-treatment consisted of washing the parts with zenoleum solution, twice daily. The animal did nicely for about two weeks, at which time my attention was called to the fact that he was not passing urine freely. An examination revealed that the sheath was very nearly closed in front of the stump of the penis. The adhesions were broken up three different times, and, not being successful thus in keeping the passage open, I decided to open the sheath about six inches posterior to the end, and on the median line, carrying the incision through the urethra, lengthwise, for three inches, which was done. The urethra being sutured to the skin, the edges soon became adherent, forming an artificial opening from which micturation is carried on without impediment and with no inconvenience.

It is obvious that the closure of the preputial cavity anterior to the stump of the penis was due to non-union between the urethra and the skin, together with the absence of the amputated portion of the penis from the preputial cavity, allowing the outer skin of the sheath to collapse. This brought the edges of the inner skin into close proximity, with the natural sequence of healing of the parts, resulting in stenosis, as there was no stricture of the urethra.

From the perfect results attained by forming an artificial opening at the posterior portion of the sheath, as described above, I feel warranted in advising that method of procedure in such cases, and would amputate the diseased portion of the penis in a simple manner, closing the urethral end of the organ.

This method seems commendable on the grounds—

(1) Of cleanliness, for the animals urinating into the sheath, as of amputation by the regular mode, would be a source of filth;

(2) The simplicity of the operation; and

(3) The prevention, or avoidance, thereby effected of stricture, or stenosis, of the sheath or urethra.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

MALADIE DU COIT.

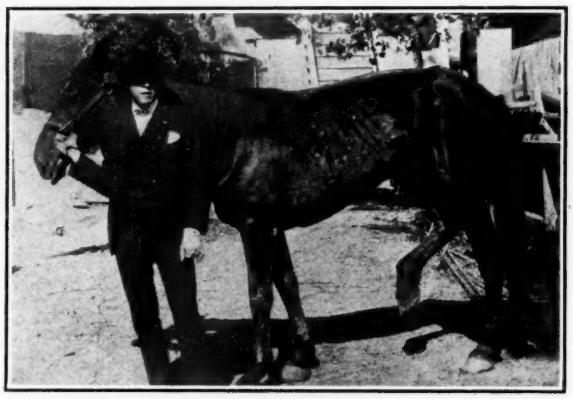
By Dr. J. P. FOSTER, State Veterinarian, Huron, S. D.

The accompanying photos illustrate a case of maladie du coit which recently came to my notice. The subject was a black mare, which in good condition had weighed over 1200 pounds, but on September 21st, the day when I destroyed her, she was in a greatly emaciated condition. She was bred last spring to a stallion which has since died of maladie du coit, and undoubtedly contracted the disease from him. The symptoms manifested in this case are well described in Hanson's "Practice of Equine Medicine" in the following: "The genital or-

gans become swollen, the mucous membrane thrown in folds and covered with a gelatinous-like fluid; red spots or erosions on the mucous membrane may also be present. The inflamed condition of the clitoris causes the mare to stretch herself and eject small quantities of urine at varying intervals; the lips of the vulva open, the erect clitoris is shown, and there is switching of the tail. On the body and legs are indolent swellings the size of a fifty-cent piece; these may disappear and reappear in other places. These swellings are said to be caused by an infiltration into the papillary layer of the derma. The most serious symptom is the paralysis of the posterior extremities; the ani-

mals drag their toes, rock their bodies, and cross their legs somewhat similar to cases of spinal meningitis or influenza. This paralysis is apt to be progressive, causing a dropping of the ears, paralysis of the facial muscles, of the lips, eyelids, etc.; soon they go down and are unable to get up, get bed-sores, and die from emaciation, paralysis, or are destroyed."

The swellings "the size of a fifty-cent piece" are noticeable in both photos; in one, over sides of the body; in the other, at the sides and below the vulva. These swellings are spoken of in Malkmus' "Clinical Diagnostics" as "urticariform swellings." Paralysis was very marked and the mare would fall to the ground when urged faster than a slow walk. The muscles of the face and under lip were partially paralyzed. There was alternate raising of the hind feet with extreme flexion of the hock; then the hock would relax and the foot would be returned



to within eight or ten inches of the stable floor and held in this position for perhaps a full minute; then the foot would be returned to the floor, and the same performance would be gone through with the opposite leg. The photo shows this position of leg and foot. In one of the photos some depigmentation is shown on skin of anus and vulva, and several ulcers may be discerned on the enlarged and distorted clitoris (this may be better seen by using a strong reading or magnifying glass). Post-mortem showed scars and active ulcers in vagina and vulva, walls of uterus enormously thickened, left ovary much enlarged and greatly inflamed. Inflammation was markedly apparent in both hip joints. On account of lack of time and proper instruments, no examination was made of brain or spinal cord.

THROMBOSIS OF THE ANTERIOR VENA CAVA IN COW.

By W. G. HOLLINGWORTH, D. V. S., Utica, N. Y.

Subject, Jersey cow, five years old, with the following history: Had been showing distressed symptoms for two years, sometimes more marked than at others; especially with the respiration. During her bad spells, loss of milk and appetite would occur. This would last a few days, then pass off for a short time. The periods were gradually becoming more frequent, till at last there was noticed a swelling on both sides of neck, enlarging slowly, head and fore extremities slightly swollen.

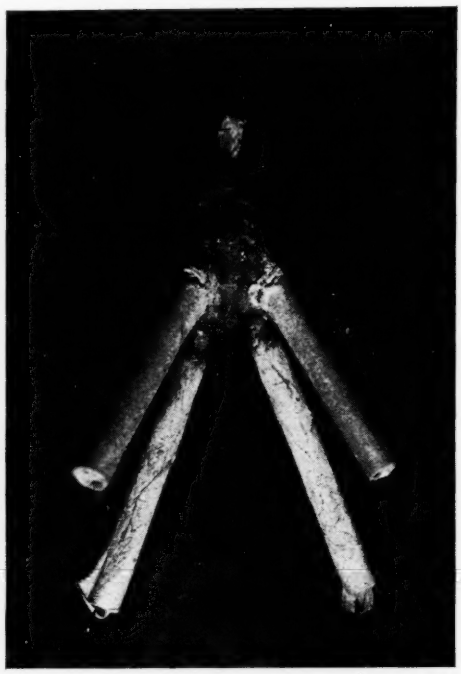
Previous to my being called, he had two professional opinions, each different, the subject becoming perceptibly worse. He made up his mind to try a third one, so he called on me. As it was a valuable animal he wanted to do all he could for her.

When I arrived at the farm the cow had wandered away, through a piece of woods down a gulf, all by herself. On examination I found her standing in a braced position, breathing, very labored, 72; temperature 101.2, pulse 108, eyes staring; the jugulars were greatly enlarged; head and legs somewhat swollen; tongue protruded; intercostal muscles bulging, and grunting. On auscultation detected a great amount of fluid in thoracic cavity (hydrothorax); heart seemed to be all right; increased bronchial breathing above the water line; dullness on percussion on both sides.

Diagnosis.—Thrombosis of the anterior vena cava, accompanied by hydrothorax, but I did not tell the owner till I had thought well of my case—as before stated there had been other diagnoses, and of course I wanted to be correct. I felt sure that I had to deal with something that impeded the return circulation. After telling him (the owner) my opinion, he wanted to have me tell him the trouble so he could understand it, so I told him that the large vein coming direct from the heart before it subdivided was plugged, and the lung cavity was half full of water. He said he would have to see it before he believed it, as he had made up his mind it was "lung fever" of a chronic form. From what he said, I should judge that was one of the diagnoses; the other I could not learn, as he had forgotten it.

Prognosis.—This is what he wanted to know. I told him it was unfavorable, and asked him to let me destroy her where she was; but that did not suit; something must be done; while there was life there was hope, as he thought a great deal of her.

I was anxious to hold a post-mortem, so I made up my mind to do something. I told him that to give medicine to her where she was, would be very inconvenient, and the best thing to do was to get her back to the barn, and to climb the hill and go through the woods would kill her. I made up my mind that that would be the best thing, but I did not tell him my thoughts, so he thought we had better get her home. So we started our up-hill journey; the first few steps were performed very well. One was stationed at her head to pull; one on each side of hips to push, and I took the tail hold. I had an object in selecting this position, as every once in a while I would give



it a twist, and that would force her ahead a few steps. Before we arrived at the top of the hill, I made up my mind we had a job on our hands. On our way up she would have to rest very often. I could see that the end was near, but was anxious to get her near the buildings and under cover, as it was commencing to rain. When on the level the owner wanted her to rest long enough to give her strength and asked me to give her something, but everything was at the barn. I told him it was getting late and raining and thought we had better proceed; another twist; in fact, it needed constant twisting now, but the

end came fast; she dropped dead very near the barn. I had a happy thought, and the scheme worked all right. We hitched a team of horses on to her, dragged her to the shed, and commenced with the post-mortem. I felt quite anxious, but confident. I placed her on her back, cut through sternum, also down to jugulars. When the thoracic cavity was opened a great amount of effusion poured out, slightly yellowish, and free from fibrinous flakes. Pleura seemed normal; lungs were compressed; removed the heart, but before I did this I felt for the vena cava, and, sure enough, there was the thrombosis, very near the bifurcation of the jugular, as seen in the photo. I had the lookers-on feel for themselves. I now removed the same to make a specimen. I felt very good as to the result of the post-mortem, as it coincided with my diagnosis to a letter. It was quite a relief, and the expressions were quite flattering and funny.

LESION OF THE CAPSULAR LIGAMENT OF THE STIFLE IN HORSE.

By FRANCIS ABELE, JR., V. S., Quincy, Mass.

Horse was brought from city stable to country home to be cared for during recuperation from lameness. History was, that horse had been found lame when taken from the stall. Diagnosis, muscular lameness of gluteal region. Antithermoline applied with rest, and horse improved. Work, or rather exercise, brought lameness back worse than before. Blister was recommended, then horse was sent to country home for nursing.

When called, found gluteal region atrophied badly. Region of stifle much enlarged and sore. Horse held foot almost free from ground. Diagnosed fractured hip. Put in slings and in four weeks horse seemed all right. Exercise, however, again made him worse than before. Suggested another doctor for consultation. He diagnosed inflammation of capsular ligament of stifle joint, to which I agreed and admitted error.

Held post-mortem. Removing skin found blood discoloration on anterior surface of patella showing bruise of bone at that place.

On trying to remove extensor pedis to get at ligaments, opened into capsular ligament of stifle joint. The synovia was discolored by blood. Here the description differed from Möller's illustration. The abnormal enlargement of the villi was very marked and the 1 ¼ by ¼ inches was none too large.

The corresponding joint was opened to compare and the

sinus-like distentions were more apparent. There seemed to be but one erosion and that on the articular surface of patella.

I had seen cases of gonitis before, but this was my first opportunity for a post-mortem on one. When we consider the serious prognosis for such a case, these incorrect diagnoses appear strange. To err is human, to forgive divine.

VERMINOUS ANEURISM IN A SIX-MONTH-OLD COLT DUE TO STRONGYLUS ARMATUS.

By JOHN J. REPP, V. M. D., Philadelphia, Pa.

February 22, 1903, I received from Dr. H. J. Hagerty, Dubuque, Iowa, a specimen, together with a letter, the pertinent part of which I quote:

"This specimen was taken from a six-month-old colt. It seemed to be the celiac axis and that it was plugged up and the seat of an aneurism, and that death was caused by shutting off the blood from the parts which the artery supplies. Would you please examine it and let me know the cause of the trouble. The colt had been failing for two months before death, but never showed any colic and ate fairly well up to the time of death."

I found the mass to consist of part of the posterior aorta and the celiac trunk and fragments of its three branches, the gastric, splenic and hepatic. There was arteritis involving all the arterial coats, aneurism and thrombosis. The middle, or gastric branch was less affected than the other two. The mass, which was as large as a hen's egg, on being laid open with the knife was found to contain about a dozen young forms of the *Strongylus armatus* Rudolphi, ½ to ¾ of an inch in length. These larvæ had burrowed into the much thickened walls of the artery, where they lay in small channels which they had produced.

It is to be noted that the infestation in this case occurred in a foal, also that the symptoms were those of cachexia with absence of colic.

This trouble is not rare in young equidæ. Semner reports that at Dorpat, Russia, all foals have verminous aneurisms; Mather has seen an epizoötic of it in foals (Neuman).

The absence of colic may be accounted for by the fact that the mesenteric arteries were not involved, and that the principal obstruction was in the hepatic and splenic artery, the gastric being only slightly involved. Thus the circulation in the digestive tube was but little impaired.

REPORT OF A CASE OF FUNGOSUS TOXICUM PARALYTICUS.*

By W. A. SWAIN, V. S., Mt. Pulaski, Ill.

On the night of August 15, 1902, I was called to attend a valuable imported German coach stallion belonging to a company of men in Mt. Pulaski, Ill. Upon my arrival I found the horse apparently suffering from a mild attack of indigestion, having a normal temperature and heart action. He did not seem to be suffering much, and I anticipated no serious trouble in soon having him all right.

I gave him a dose of ordinary colic mixture, and waited an hour, to find him with no material change. I then repeated the dose which I had given at first, and at the end of one hour there was still no perceptible change. I now decided to administer an active physic, which I did, giving him four drachms of aloin, together with about four drachms of powdered zingiber. This seemed to afford him some relief. In about one-half to three-quarters of an hour from the time of administering the above physic, the patient ceased manifesting uneasiness and stood quietly in his stall. His temperature at this time was normal; pulse about normal; breathing, if anything, a shade slower than normal. He seemed to be rather stupid and sleepy and paid little attention to what was going on around him. I did not like his appearance, and, after consulting with the owners of the horse, we decided to call my father, Dr. S. H. Swain, of Decatur, in consultation. He was to come over on the early morning train. I then lay down and slept until a few minutes before he arrived, and did not see the horse again until he came, at which time we were surprised to find him manifesting strong symptoms of food poisoning. The first and one of the most prominent symptoms to attract attention at this time in this case was an apparent attempt to eat. The patient would thrust his nose into the hay, and to a casual observer would seem to be eating, but on closer observation it was seen that he was only nosing in the food in an unconscious condition. When led from his stall he was almost unable to stand, showing great lack of coördination, with pupils of eyes dilated and tongue hanging from mouth. The power of deglutition was entirely lost, making it impossible to administer medicinal agents per os. Temperature at this time $98\frac{2}{5}$ degrees, pulse about 22, respiration very slow and stertorous.

On questioning the attendant, we learned that two or three

* Read before Illinois Medical and Surgical Association, January 14–15, 1903.

days prior to the manifestation of the above symptoms the horse had torn up the floor of his manger, which had a false or double bottom, and had eaten a quantity of mouldy chaff which had there accumulated. We pronounced it a case of fungosus toxicum paralyticus, and ascribed the cause to the eating of impure, mouldy food as described above.

We gave him by hypodermic injection one-half gr. strychnia and forty minims fl. ex. digitalis, and had him moved about for about an hour. His temperature was again taken and found to have gone still lower, being now 96½ degrees; pulse almost imperceptible; respiration practically the same.

We tried two more hypodermic injections of strychnine and digitalis at intervals of an hour with unsatisfactory results as to temperature and heart's action. We then decided to try intravenous injections of stimulants; and for this purpose we agreed upon strong aqua ammonia, which was diluted with equal parts of distilled water, and injected into the median subcutaneous vein, administering two drachm doses every 30 minutes; with the most satisfactory results. Shortly after the first injection the temperature responded and rose to 98½ degrees; pulse 35; respiration more natural. We administered in all four injections, 30 minutes apart, at the end of which time the temperature was 103 degrees, pulse 48, and respiration practically normal. The pupils of the eyes had assumed their normal appearance and the power of deglutition had returned, together with the use of the tongue, which was now kept within the mouth in a normal position.

The subsequent treatment consisted of stomachics: Tr. gentian, two drachms; tr. zingiber, four drachms; tr. nux, two drachms; hydrochloric acid dil., one drachm; mixed and given at one dose, repeated three times daily for a period of about two weeks.

He was then changed to powders composed of about the above ingredients, less the hydrochloric acid, given three times daily in feed.

Our patient made a complete although not very rapid recovery; not being fully at himself for about six weeks.

GOOD RESULTS FROM BARIUM CHLORIDE GIVEN BY THE STOMACH.

By HUGH S. MAXWELL, V. S., Salina, Kansas.

I wish to report an experiment I made with barium chloride. This new drug I have used this season repeatedly with success,

but almost every veterinarian that I met would warn me against its use; but as it had never failed me, and I had seen no bad results, I continued its use daily, administering from two to three drachms at a dose in a quart of water. A week ago I purchased a bronco, and when trying to lead her the man on the rope let her rear up and fall backwards, fracturing the occipital crest. I kept her a few days to see the outcome, and finally she showed serious symptoms and became unmanageable. I concluded to kill her, and that I would test barium chloride. At 9 P. M. I gave her five drachms; she became quiet in six minutes, and laid thus for fifty-three minutes; her bowels moved in nineteen minutes. In one hour and twenty minutes I gave her a second dose of seven drachms; her manner following this was almost the same as after the first, except that her respirations were more labored, and her pulse stronger and slower. At midnight I gave her a third dose of nine drachms; in about ten minutes she became very quiet, her respirations were exceedingly long and labored, her pulse almost imperceptible. She continued in this condition for about thirty-eight minutes, when she became very restless, too weak to raise her head from the ground, striking severely with both fore feet, but never moving her hind ones. At 1.15 I pithed her.

I feel safe in saying that we may use from two to five drachms with safety, but from all that I could see I think three drachms will purge as quickly as more. I have seen movements of the bowels in fifteen minutes after administering a two-drachm dose to a 1400 pound horse.

"SHEEP: Principal Breeds. Brief Discussion Relative to Sheep Husbandry in Louisiana. Some of the More Important Local Parasitic Ailments. Results of Experiment with Nodular Disease of the Intestines." By W. H. Dalrymple, M. R. C. V. S., veterinarian Louisiana State Experiment Station, Baton Rouge. In this bulletin of the Agricultural Experiment Station Dr. Dalrymple has taken up briefly the subject of sheep husbandry, with a description of the various breeds, each of which has a characteristic illustration. He describes many of the local internal parasitic diseases of sheep as well as "the nodular disease of the intestines," a description of which was given in the last volume of the REVIEW by Dr. Reynolds, of the Minnesota Station. Dr. Dalrymple gives an account of an interesting experiment with the disease.

EXTRACTS FROM EXCHANGES.

FRENCH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

ENCYSTED PERITONITIS DUE TO A FOREIGN BODY [*Prof. G. Moussu*].—This case has given occasion to the Professor for one of the clinical demonstrations which are so commonly resorted to in the French schools. The animal, a four-year-old cow, had been sick for more than a month with continued digestive troubles. In standing, her legs were brought close together; the hind legs were swollen; there was a permanent tympanites; loss of appetite, abundant black fœtid diarrhœa. She coughed some; her temperature was normal. Examination of the chest was negative, also that of the heart. Abdominal manipulation and auscultation were negative. Percussion over the right hypochondriac region showed great sensibility and soreness, which was absent on the other side. Examination of the genito-urinary system indicated nothing. The diagnosis was very difficult. Was it tuberculosis? The cow was tested, without result. Finally, one day as the animal got up in her stall a manifest gurgling noise was heard and localized to the superior part of the right hypochondriac region. This noise was perceptible for a moment only and soon subsided. Yet, it could be heard again if the animal was pushed to and fro. An exploration in the eleventh intercostal space allowed the removal of fluid analogous to that taken in pericarditis by foreign body. This liquid permitted the diagnosis. The treatment consisted in evacuation of the purulent sac by resection of the eleventh rib, but was followed by no satisfactory result. At the post-mortem a large encysted abscess was found between the inferior wall of the reticulum and the abdominal wall of the xyphoid region. This abscess had thick, sclerous walls and contained a needle 5 centimetres long. There were three other abscesses as big as an orange in the mesentery, and on the outside of the rumen.—(*Rec. de Med. Vet., Sept., 1903.*)

INJECTIONS OF PURE TINCTURE OF IODINE [*Mr. Joyeux*].—Those injections are not resorted to in ordinary practice, and serious accidents following their use have made the iodo-iodurated solutions preferred; and, yet, the author has had occasion to resort to the pure injections and obtained satisfactory results. He records the brief history of nine observations, tendinous

windgalls, capped hocks, cysts, and from the results he has obtained comes to the following conclusions: The injection of pure tincture of iodine for the above named diseases, made with the aseptic precautions resorted to in our day, seems to me free from danger and worthy of a more frequent application. I do not believe the method will fail less than others; it has its failures, but it often offers the opportunity to remove entirely and without leaving marks, blemishes, that are not obtained with blisters or firings. Sometimes a second injection is required, 5, 6, 8 or 15 days after the first; it is most advantageous to use flannel bandages. Unless there is marked lameness, the animal can be kept at work.—(*Rec. de Med. Vet., Sept., 1903.*)

THE USE OF SALICYLATE OF METHYL [*A. Petit*].—For more than a year the author has used salicylate of methyl in the treatment of sprains of tendons or of ligamentous distensions, and he has obtained good results. Out of thirty cases treated this year, all have been cured in a very short time and with permanent results. Excellent results have also been obtained by the external use of the salicylate of methyl in the treatment of articular rheumatisms in dogs. One or two frictions daily are sufficient. There remains no mark of its use. The application of the drug in equine practice will prove very advantageous. The frictions need not be made very hard to obtain rapid recoveries.—(*Rec. de Med. Vet., Sept., 1903.*)

DILATATION OF THE STOMACH IN A MULE [*P. Castel*].—This abnormality is not common, as only five cases have been recorded by Leisering, Fitzroy, Phillpot, Koch, Barrier and Eilmann. This case deserves notice. It was in a mule, aged twenty-five years, which has never been sick. She was taken with colic after her noon meal and treated by an empiric, which failed to relieve her. After 26 hours of suffering the author was called. The animal, although standing, seemed ready to drop. She stood with the head down, staring eyes, dilated pupils, mouth partly open, mucous membranes pale, extremities cold, abdomen slightly tympanitic. The end was evidently near. The animal dropped and died after making useless efforts to vomit. The post-mortem was made three hours after. The small intestine was the seat of extensive hæmorrhage; the stomach was extremely distended although its position and relations were normal. The organ measured 0.58 centimetres in its transversal curvature, from the bottom of the left to that of the right *cul-de-sac;* from the anterior to the posterior face it measured 0.38 centimetres. While normally the

capacity of the stomach is between 9 and 15 litres, this was between 50 and 55 litres. The walls had their normal thickness; the mucous membrane was not altered, and to all appearances this condition of the organ was not the result of a pathological condition; it had certainly been compatible with the general health of the animal for at least a great part of its long life.—(*Revue Veter., July, 1903.*)

QUEER TREATMENT FOR ŒSOPHAGEAL OBSTRUCTION—FATAL MANIPULATIONS [*H. Gilbert*].—A cow was sick from early morning; she stopped eating suddenly while partaking of a meal of chopped carrots. The empiric of the town was called, and having detected a piece of carrot in the œsophagus took a piece of a broom handle and pushed it down the animal's throat. Immediately after a large swelling developed in the parotid region, and the superior part of both jugular grooves, but the foreign body was not displaced. A second introduction of the broom handle gave no better result. The attendant retired to his home to consult some books, and at his return poured into the poor brute's throat, notwithstanding its struggles, *two pounds of lead shot No. 8*, mixed with sweet oil. The result was not long in coming: the cow was dying as Mr. G. was called. At the autopsy the piece of carrot was found still in the œsophagus. The lungs were congested and the small bronchi literally stuffed with shot.—(*Rev. Vet., July, 1903.*) [This seems to us a case worthy of the interference of the S. P. C. A.; and on reading it, one will ask, why is not the protective law of the profession yet passed in France?—EDITOR.]

SERIOUS TRAUMATISM OF THE EYE—INJECTION OF COLLARGOL IN THE JUGULAR—RAPID IMPROVEMENT [*M. Brun*].—Due to traumatism, a horse had a laceration of the cornea, through which passed a big hernia of the iris; the eye was also the seat of an abundant muco-purulent secretion. Warm and repeated washings with boricated camomile tea and atropine in the eye failed to give any result. The author tried intravenous injections of collargol, 40 centigrams in suspension in 10 cubic centimetres of water. The second day after the injection, the protruding parts of the iris had almost disappeared; the collargol was continued for five days in frictions made on the inner face of the thighs, of the fore arm and on the course of the jugular of the right side. A few days after the alarming symptoms had considerably improved, and finally the eye, somewhat atrophied, resumed a satisfactory aspect. The crystalline lens remained opaque.—(*Soc. Centrale, June, 1903.*)

SARCO-MELANOTIC INFECTION GIVING RISE TO PLEURISY IN A MARE 16 YEARS OLD [*Mr. Ravier*].—The subject of this record was an animal, grey in color, used for heavy draught, which presented all the symptoms of thoracic effusion. The animal was put under treatment, consisting in repeated punctures of the chest, injections of artificial serum, and in the meantime strychnia, digitaline, caffeine, iodide of potassium at various times. During the first seven days of the treatment 100 litres of fluid were removed, 30 being taken off on the second day. As for the injections of serum, which lasted until nearly the end of the treatment, 53 litres were administered, some under the skin, but the balance in the jugular. The animal died in excessive general emaciation. At the post-mortem two melanotic tumors as big as a nut were found in the sub-scapularis muscles, also in the chest a lobulated mass, enveloping the pericardium, adherent to the ribs and obstructing the entrance of the chest. Numerous melanotic tumors of various sizes existed along the vertebræ and the superior extremity of the ribs. There were a few small ones in the spleen and liver. All the other organs were sound. Of the pleurisy there was as lesions only a rough appearance of the surface of the lungs. For the author, it is evident that had it not been for the early and repeated thoracenteses which were performed and the injections of serum, the mare would not have lived as long as she did, and consequently that this therapeutic measure is always indicated, and that the melanotic affection was the cause beyond doubt of the pleuritic trouble.—(*Prog. Veter, July 12, 1903.*)

STRANGE CASE OF DIRECT INTESTINAL OBSTRUCTION IN A HORSE—ESERINE AND PILOCARPINE [*M. Desprunie*].—An old pony after a fair day of work was returned home and put in the stable. The next day he refused his food and showed indications of constipation. Mild laxative treatment was ordered, but without result. There being no change in his condition, aloes was prescribed, and also rectal injections every hour. No purge the next day, but swelling round the anus, attributed to the improper use of the syringe for the injections. 0.06 centig. of eserine and 0.10 of pilocarpine were administered in 5 c.c. of distilled water. Salivation was soon manifested, but no fæcal movements after 10, 30 minutes, and even after an hour and a half. The next day no change, except that the swelling around the anus was smaller. New injections of eserine and pilocarpine were made—0.10 gr. of the first, 0.15 of the second—the mixture divided in two doses. After the second

dose was given, 25 minutes after the first, abundant relief of the abdomen occurred—too much so, as opium had to be resorted to so as to control the pains, the efforts and the abdominal flow. After a few days of rest, laxatives and finally aloes completed the clearing of the abdomen. It was only five days later that the explanation of the trouble and that of the swelling of the anus was found—an abscess was detected, fluctuating, at the anus; explored, punctured and emptied of two litres of thick pus of healthy aspect. This was the last that Mr. D. saw of this animal. From the consideration of this case the author concludes that similar injections of eserine and pilocarpine can be used in one dose or in two, at 20 minutes apart, even in middle sized horses; that this quantity can be renewed without danger in less than 24 hours, and that if the second injection gives no result in one hour, the treatment is powerless, and the animal is condemned.—(*Prog. Vet., Sept., 1903.*)

ENGLISH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

BOTRYOMYCOSIS—OPERATION—RECOVERY [*A. R. Routhedge, F. R. C. V. S.*].—Fourteen years old, a brown mare has had for three years a tumor situated on the anterior face and a little below the elbow. First no bigger than a tomato, it was hard, not painful, and seemed to involve the skin and cellular tissue below only. Now, the hairs have fallen off, the skin is covered with little elevations, formed by the cicatrization of numerous small abscesses, which have formed, ulcerated and healed. The tumor is as large as a turnip and interferes with the action of the elbow; the mare is quite lame. The operation consisted in an elliptic incision of the skin, dissection of the mass and its removal from the surface of the extensor muscles. Two large abscesses, containing about four ounces of pus each, were found in the depth of the tumor. The wound was treated antiseptically with chinosol, chloride of zinc, according to indications. The suppuration was very abundant for fifteen days. The mare remained in slings for a month. The tumor weighed three pounds and two ounces. The diagnosis was confirmed by the microscopic examination made by Prof. McFadyean. There was no return of the trouble.—(*Journ. of Comp. Path. and Therap., June, 1903.*)

HYDRONEPHROSIS IN A DOG, WITH CONGENITAL ABSENCE OF THE OTHER KIDNEY [*G. Leighton, M. D., F. R. S. E.*].—On Nov. 14, 1902, this dog was examined for a severe diarrhœa, existing for three weeks. He is anæmic, and in bad condition. The pulse and temperature are normal. The conjunctivæ are yellowish. The abdomen is retracted, not painful; the fæces soft and yellowish. Oily purgation, tonics, and astringents were prescribed, but with little success. Another examination of the malady reveals nothing new. Treatment is continued and followed by slight improvement. The dog is returned to his master. After two months, he is brought back in worse condition. The back is arched, the animal walks with difficulty, and finally he is destroyed. The case is certainly an ordinary one, but as the cause of the diarrhœa had remained unknown, an autopsy is made with the hope of detecting it, but nothing was found to explain it. However, the examination of the urino-genital system is most interesting. The left kidney is absent. The right, on the contrary, is enormous. The ureter is sufficiently dilated to allow the introduction of the middle finger; it opens in a dilatation of the kidney, which is full of fluid. This kidney is a true type of hydronephrotic kidney. The bladder is normal, perhaps a little large. As there was no obstruction in the bladder, as there were no calculi in the ureters, and as the urethra was normal, the only possible cause of the renal condition must be looked for in the fact of the presence of a considerable enlargement of the prostate, which was pressing on the urethral canal. The case was one of hydronephrosis acquired.—(*Journ. of Comp. Pathol. and Ther., June, 1903.*

INTERESTING CASE OF HÆMATURIA RENALIS, DUE TO UMBILICAL INFECTION IN A COLT [*W. Scott, F. R. C. V. S.*].—Colt, three days old, suffering with severe diarrhœa. He has slight colic. His temperature is up to 105.2° F., the respiration accelerated, but no thoracic lesions detected. The umbilical cord is shrunken and dry. Opium, chalk, and rice water were prescribed, and also hot applications to the abdomen. A slight improvement took place, but he has a passage of pure blood per rectum. Eight ounces of urine were collected in a bottle; it is blood red colored. After the colt has urinated he immediately lays down. The animal grew weaker and weaker and died two days later. At the post-mortem, the abdomen was found containing about ten ounces of yellowish fluid. The intestinal folds round the umbilicus are glued together and ad-

herent to the surrounding tissues. The urachus is thickened and extensively inflamed. The bladder is distended and contains a bloody liquid, in which floats a large clot of blood. The kidneys and the ureters are sound. The superenal capsules and the lymphatics are inflamed. The liver is soft and friable. The left lung hypostatic. There were small petechiæ on the endocardium of the left heart and ante-mortem clots in both ventricles. The analysis of three specimens of urine passed in twelve hours shows that the color varied from the dark red to the cherry red and to a clear rosy hue. The reaction remained alkaline in each case, and the specific gravity varied between 1015, 1020, 1010. Each specimen contained albumin. Bacilli in great number were observed in the urine of the first analysis, but were less in the second and in the third also.—(*Veterin. Record, June 13, 1903.*)

TREATMENT OF TETANUS BY INTRACRANIAL INJECTION OF ANTITETANINE [*By A. Gofton, M. R. C. V. S.*].—Remembering two cases of recovery recorded in the *Journal of Comparative Pathology and Therapeutics* of the month of Dec., 1901, the author decided to resort to the same treatment as soon as he had the opportunity. The method he used consisted in disinfection of the skin, incision of the temporal muscle down to the parietal bone, trephining with a good sized gimlet, injection of antitetanine (about 9 cubic centimetres), dressing with boric powder and sublimated cotton. In the two cases, he resorted to this treatment and which he applied about three days after the apparition of the tetanic symptoms, both animals were operated without difficulty; the injection was not followed by any ill effect and without diminution in the symptoms. Both patients died. They had received two injections each.—(*Veter. Record, June 27, 1903.*)

TWO INTERESTING CASES [*C. E. Dayus, M. R. C. V. S.*].—The record of two calves born of two Hereford cows. The two mothers had been kept together during the winter and while in calf. The two calves presented an abnormal affection in the same leg—the right fore—with, however, this difference: in one the leg is reflexed at right angles, and passing under the sternum shows the foot on the left elbow; in the other the leg is simply extended backwards along the body with the foot resting on the posterior and external face of the right thigh. After being fattened, the two phenomena were sent to the butcher.—(*Veter. Record, July 11, 1903.*)

A FOSTER MOTHER [*P. McKinlay, M. R. C. V. S.*].—

After giving birth to a fine colt, a valuable mare died from a prolapsus of the uterus. Rather embarrassed as to how to raise the colt, the owner decided to call to service an old Ayrshire cow, whose udder, rather exhausted and teats pendulous, seemed to him likely to make him a good foster mother, although she had never sucked her calves. The cow took well to her new function; she seemed to be happy with her adopted (?) son, which jumped and kicked about her and seemed well satisfied with the little he got from the old cow.—(*Vet. Rec., July 18, 1903.*)

CORRESPONDENCE.

VETERINARY PRESCRIPTIONS OF A CENTURY AGO.

BALTIMORE, MD., Sept. 28, 1903.

Editors American Veterinary Review:

DEAR SIRS:—I enclose herewith a copy of a recipe for "Apoplexy or Staggers," taken from "The Complete Virginia and Maryland Farrier," published in Winchester, Va., in 1818.

This may afford some new (?) light on the subject treated of.

Very truly yours,

WM. H. MARTENET.

* * *

"No. 5. The signs of this disease are: The Horse will foam at the mouth white, and will seem dull-headed, and will have at that time a blue film over his eyes, and will wander much up and down: be sure to let him blood on both his neck veins within one or two days after he complains, and in the third furrow in the palate of his mouth, with the point of a Cornet-horn: You may run an awl into the gristles of his nose, something above his nostrils; the bleeding at the mouth and the nose will ease the pain in his head. The cure is, take a handfull of *Rue*, by some called *Herb-grass*, three cloves of *Garlick*, a spoonfull of *Salt*, a spoonfull of *Vinegar*, and two spoonsfull of *Aquæ Vitæ*; bruise all these together well, and then put the one half into one ear, and the other half into the other ear, with a little wool after it; put the liquor in with a spoon first, and then the herbs, and then the wool; and then tie or stitch with a needle and thread the ears up very fast with two listing garters; then presently fume him at the nostrils through a funnel with the stalks and peelings of *Garlick*, beaten in a mortar with *Mastick* and *Frankincense* mixed together; of these make pel-

lets as big as a bullet, and lay them upon a chafingdish of fresh coals, and the smoke will go up through the funnel into the head, and much comfort and cleanse the brain; fume his head three times a day till you see him mend: At the same time beat *Red wood-seed*, which grows in Winter-corn, by some called *Poppy-seed*, very small, and give as much of the powder at each nostril as will lay upon a six-pence, in two half horn-fulls of any beer; do this every morning: Or thus, if you cannot get *Poppy-seed*, then give him white *Poppy-water*, which you may likewise have at the *Apothecary's*, and give at each nostril a spoonful and a half at each time; it will make him sleep so soundly, that you may walk upon him from the head to the tail, and he will not stir; he will lay as if he were dead for a time; his sleeping will mightily refresh him: After you have given it to him, you will see him, before he falls down, to buckle and sally, till at last he will tumble down. Let him stand in a dark room and warm, where he may see no light; let him have bursten oats, and mashes of ground malt; let his drink be cold water; that which you put in his ears, must remain there twenty-four hours and no longer: Put wool, flax, lint, or a rag after it; stitching is better than a garter, for that will make the hair come white. Proved a rare cure."

DR. P. O'REAR, of Indianapolis, Ind., city meat inspector and a prominent and successful practitioner, died of typhoid fever recently.

DR. JAMES KEELEY, Inspector, B. A. I. Indianapolis, Ind., has resigned his position as inspector and entered the Army as veterinarian, having successfully passed the examination; he is now stationed at Ft. Thomas, Kentucky, in the Artillery branch.

DR. CLARENCE E. SHAW (N. Y. S. V. C., '01), of Brooklyn, N. Y., was married on 21st ult., to Miss Murray, of Ithaca, N. Y. Dr. Shaw has been associated with Dr. Roscoe R. Bell as chief assistant for the past two years. We heartily congratulate him, and if his new estate brings him as much happiness as he deserves, he will indeed be a joyous benedict.

"REPORT OF AN ENZOÖTIC AMONG CATTLE CAUSED BY A BACILLUS OF THE ENTERITIDIS GROUP," by John R. Mohler, A. M., V. M. D., and John S. Buckley, D. V. S., Pathological Division, Bureau of Animal Industry. This carefully prepared and well illustrated bulletin is reprinted from the 19th Annual Report of the Bureau (1902), and is a valuable contribution to our pathological literature.

ARMY VETERINARY DEPARTMENT.

This REVIEW department was opened in the March number, and its object was there explained—the betterment of the Army Veterinary Service, through affording a forum for the discussion of subjects in which army veterinarians are deeply interested, and which are at the same time of interest and value to veterinary readers generally. The profession, and particularly army veterinarians, are invited to contribute communications, original articles, items of news, etc.

ARMY VETERINARY NOTES.

The U. S. Army School for Farriers and Horseshoers at Fort Riley, Kans.—The first class of graduates from this army school, numbering about seventy-five men, has just been distributed throughout the Cavalry and Artillery. The men who thus returned to their regiments are so full of praise for the instruction they received and of the zeal and devotion of their instructors, that there can be no doubt of the practical success of this school. Liberal acknowledgment is due, therefore, to Dr. Plummer, 4th Cavalry, and Dr. Power, Artillery Corps, for their correct conception of the aims of this new army school, and for its successful practical inauguration and management. We hope to see established at Fort Riley, at some future day, a military veterinary school, where the young army veterinarian, preparatory to entering upon his duty with his regiment or corps, will have a chance to undergo a course of instruction in military veterinary hygiene, military veterinary surgery, medicine and horseshoeing. At the present time the military branches of veterinary science are not taught anywhere in this country, and the newly appointed army veterinarian has to wander guidelessly through a labyrinth of strange occurrences until he finally discovers for himself the needs and purposes of military veterinary science. How to treat quickly and successfully a case of colic on the march, when the horse with heavy pack and arms is rolling with pain in mud or on the rocky mountain side, the command pressing on, leaving the veterinarian behind with the frightened trooper on whose face is reflected the visions of a march on foot into camp some twenty or thirty miles distant; how to sew up a dirty wound on the legs or other

flexible part of the body, plaster it up and make the stitches hold out for a continued onward march; how to assist a severely lame horse to walk practically on three legs in the ruthless pursuit of an enemy where there is no safe place to leave him behind; how to remain calm at a profusely bleeding bullet wound in the midst of confusion of an engagement; how to quickly prepare a horse's foot on a rough mountain road when he has lost his shoe and there are no shoes on hand; how to make horseshoes and nails of scrap iron and make them stick, as it was done in the Philippine campaign of captured insurgent bolos (short swords) with a small portable forge brought on shore from a U. S. gun-boat; how to control glanders and other contagious diseases in war, with constant movements of troops, where the conventional rules of veterinary sanitary science, so beautifully laid down in our text-books, appear as an irony of fate and a ridicule to science; this and much more, as encountered in endless combination in warfare, ought to be taught the young army veterinarian, somehow and somewhere. That such instruction would repay the Government a thousandfold, could hardly be doubted by anybody, and it seemingly has paid to many European armies which have for so long a time maintained their military veterinary schools. Whenever our Army becomes thoroughly alive to ALL the different issues that confront it for its proper equipment in knowledge and practice, whenever it will become a thoroughly educated army in all of its branches, including the veterinary, then we can hope for the fulfillment of such a suggestion as that of the establishment of an army veterinary school. At present we have still to contend with voices of dissent, which doubt even the wisdom and practical necessity of establishing the army school for farriers and horseshoers, an institution which is so clearly of the greatest practical utility to the military service. We wish, therefore, to encourage the good work done so far and to be done hereafter, by Drs. Plummer and Power, in the training of competent military horseshoers, and we wish them to feel that in doing so they also fulfill a mission in gradually educating up our Army to an understanding of the value of military veterinary instruction, which in its infancy is already established with the course of instruction at the army school for farriers and horseshoers at Fort Riley.

OLOF SCHWARZKOPF.

Foreign Army Veterinary Notes.—While the promised improvements in the English Army Veterinary Department re-

main promises, and the English army veterinary surgeons are still patiently waiting for the appearance of the Royal Warrant, a most magnificent and thorough reorganization of the German Army Veterinary Service has just taken place. Emperor William, by a Royal Decree, dated August 27, 1903, and in his profuse fashion, has so thoroughly upset the old order of things in the Army Veterinary Service that even the German army veterinarians must have hardly trusted their eyes when they first read this Royal decree. He has smashed the old Military Veterinary School at Berlin (established 1793) and termed it a "Military Veterinary Academy"; the "pupils" of the former schools are now "military students"; the "Army Veterinary Department" is now styled "Veterinary Officer's Corps"; the old, reliable "veterinary officials" have become "commissioned veterinary officers"; the jaw-breaking German name "rossarzt" (horse physician) has been changed into "veterinaer." The new charges consist of corps staff veterinarians (majors) at army corps; of staff veterinarians (captains) at regimental headquarters; and of veterinarians and assistant veterinarians as lieutenants. There only remains the old title and rank of the inspector general of the Army Veterinary Service who is a lieutenant colonel, but as His Majesty has ordered the Minister of War to propose such other changes as may complete the reorganization of the veterinary officer's corps, they will be promptly forthcoming and will be generously approved. We report this complete reorganization of the German army veterinary corps with satisfaction, because it cannot fail to have some bearing upon our own future army legislation. There is no other branch of our Government which is so watchful of foreign improvements as the War Department, and our foreign military attachees will promptly report those great changes in the German army. Most of our arguments in Congress for improvements of the Veterinary Service in the U. S. Army were heretofore based upon comparisons with the principal foreign armies, and the more unfavorable this comparison is for us, the better will be the prospect of improvement upon the lines of those armies who lead in the experience of army organization. (O. S.)

AT RANDOLPH, N. Y., Sept. 16, 1903, Dr. Bert R. Wilbur, D. V. M., graduate of the New York State Veterinary College, '03, was married at high noon to Miss Belle Francenna Curtiss. Dr. and Mrs. Wilbur will be at home in Randolph, N. Y. after Sept. 16, 1903.

SOCIETY MEETINGS.

NEW YORK STATE VETERINARY MEDICAL SOCIETY.

REPORT OF THE CLINICS AT THE MEETING HELD AT ITHACA, SEPTEMBER 15, 16, 17, 1903.*

Believing that a thoroughly illustrative clinic is one of the best methods for teaching the practical features of veterinary science, the committee in charge of the clinic for the meeting of the New York State Veterinary Medical Society attempted to arrange a clinic which would prove interesting and instructive, whether viewed from the pathologic, operative, or other standpoint. The cases offered might be arranged in three categories: (1) Experimental demonstration, including the demonstration of the effects of certain drugs upon blood pressure, by Dr. Fish. (2) Cases occurring in practice, of interest from a diagnostic or therapeutic standpoint, in which we include, as specially worthy of mention, some cases of that much dreaded malady, bursattee. (3) Operative work, chiefly of major surgery, and largely under anæsthesia. The latter constituted the greater part of the clinic.

Demonstration of the Effects of Drugs upon the Heart and Blood Pressure.

By P. A. Fish, M. D., M. D. V.

A manometer, containing a double column of mercury connected with a rubber tube and cannula, containing a solution of magnesium sulphate to prevent the clotting of the blood, was connected with the carotid artery of the horse. When the clamp was removed from the artery, the mercury in the manometer rose and fell with every pulsation of the heart. Floating upon one of the columns of mercury was a light lever which recorded every fluctuation of the mercury, due to the heart beat, upon a cylinder revolving at a uniform speed.

In this way was obtained a tracing of the normal heart beat, the force being measured by the vertical distance to which the lever rose and fell, the frequency being noted by the horizontal distance between the vertical curves. The blood pressure was determined by the position of the tracing above or below the

* Reported by Dr. W. L. Williams, Chairman of the Committee of Arrangements.

normal tracing; the former indicating an increased and the latter a decreased pressure.

The first drug employed was barium chloride; eight grains of the chemically pure salt dissolved in normal salt solution, was injected into the jugular vein. The results were: 1st, to increase the force of the heart beat, the vertical tracings being twice as high as the normal; 2d, to slightly decrease the frequency of the beat, or slow the heart; 3d, to increase blood pressure, as shown by the lever writing at a point above the normal. A moderate electrical stimulus applied to the vagus nerve produced a slight fall in blood pressure and the heart action was slowed a trifle more. In this experiment it would appear that the barium acts as a direct stimulant to the cardiac muscle, increasing the force of its contraction. The slowing effect would indicate that the drug has a mildly stimulating effect upon the vagus centre. The increased blood pressure would be due in part to the increased force of the heart's contraction and the greater amount of blood pumped into the vessels; also, in part, to the action of the drug in causing constriction of the peripheral vessels, either by stimulating the vaso-motor centre or by direct action upon the muscle fibres in the walls of the vessels. The fact that the heart did not readily respond to the stimulation of the vagus nerve, would indicate that the energy imparted to the heart's contraction by the direct stimulation of its muscle is sufficiently great to overcome some of the vagus control.

The second drug employed was atropine sulphate. Two grains of this alkaloid dissolved in normal salt solution were injected into the jugular. This produced a quickening of the heart beat and a rise in blood pressure, the latter being partly due to the former, but mostly to the stimulating action of the drug upon the vaso-motor centre. Electrical stimulation of the vagus nerve was entirely ineffective; this being due to the action of the drug in paralyzing the terminations of the vagus nerve in the heart. Stimulation of the respiratory centre was noted.

The third drug used was nitroglycerin. Two grains were dissolved in normal salt solution and injected as before. The result was a fall in blood pressure, due to the action of the drug in dilating the peripheral vessels. Respiration continued stimulated. Stimulation of the vagus was ineffective, causing the blood pressure to rise somewhat. Nitroglycerin tends to paralyze the vagus centre, but in this case there should also be

taken into consideration a probable continued action of the atropine upon the vagus endings.

The last injection was ten cubic centimetres of adrenalin solution, in the proportion of 1 to 5000 c.c. of normal salt solution. This proved ineffective, as there was no rise in blood pressure, as expected. The heart continued insensitive to vagus control, although stronger electric stimulation was employed. It is not improbable that the ineffectiveness of the adrenalin may have been due to the continued action of the drugs previously employed.

A Series of Cases of Bursattee.

(1.) A recent case of bursattee showing the disease in active stages. Owner, Mr. B., Ithaca, N. Y. The fore legs only were affected. First appearance of the trouble was three years ago in the summer. The second summer the sores were not so bad as the first. This summer the sores were not so bad as the first summer, but were worse than during the second summer. The case had received no treatment. When presented at the clinic two sores were apparent, one of which was healing and was well scabbed over. The other was partially scabbed but showed some raw surface which was discharging slightly. A few scars were noticed where healing had occurred. Treatment recommended was the frequent application of cold water or turning the hose on the affected parts several times a day. The application of antiseptics and emollients are of some use in keeping away the flies and relieving the irritation. (2.) An old standing case of bursattee demonstrating the result of treatment. The patient is a Kentucky bred mare, purchased by the present owner in 1895, and her history consequently not traceable beyond that date although rumor had it that the animal had suffered from bursattee sores prior to purchase. During the summer of 1896 the animal suffered from a sore on the right posterior coronet which refused to heal during the hot weather, and during July of the same year another sore appeared upon the right anterior fetlock in front, which also resisted treatment; a third and smaller sore existed upon the same limb and presented a circular outline with pale red granulations rising above the skin and highly vascular. Other sores of lesser magnitude appeared upon different parts, which were handled successfully. When presented on September 29th, 1896, there were no open sores, but a number of naked cicatrices raised above the skin, thickened and indurated. At the seat of the largest previous sore on the right posterior coronet the scar is very prominent

and almost horny in character. A diagnosis of bursattee was made, but as cool weather had come it was deemed inexpedient to undertake treatment, and the animal passed through the winter and spring without anything notable. On July 30, 1897, the patient returned with a well-marked bursattee sore ¾ in. across on the surface of the right anterior pastern, which stood out ½ inch above the level, hard, vascular and discharging a thin serosity. This was the seat of a prior ulcer and had broken out afresh on the 27th of July. The hardened portion of the ulcer was mostly cut out with a scalpel, after which the thermocautery was used freely, and then dressed with iodoform with a firm bandage. On August 2d, the patient was returned, the wound dressed with silver of nitrate followed with iodoform and a bandage as before; at this time two new ulcers were apparent on the left fore limb, both of which were cauterized with silver nitrate and bandaged with tincture of iodine. On August 6th it was found the iodine had blistered and inflamed the parts, and it was replaced with iodoform ointment 1–10. The sores gradually began to heal and improve and as the weather grew cooler healed completely. About July 1, 1898, the sores again appeared, and on July 10th she was again presented for advice; the sores had not been bad and were treated in the general way, by occasional cauterization with silver nitrate, followed by the daily application of iodoform, with a tight bandage. At this time the owner was advised to cease grooming the feet and legs during the hot season, and instead to shower these parts thoroughly for one-half to one hour daily with cold water, and to scrupulously avoid touching the feet and legs with comb or brush. Whenever any sores appeared they were to be treated upon the general lines indicated. From that time on the case has been handled in this manner with the result that each summer small superficial sores appear, but have been quickly repressed and have given no trouble. The patient as presented at the meeting was in fine condition and showing only very slight traces of what had been seven years previous, very unsightly and disagreeable sores. (3.) The patient is a chestnut mare used as a ladies' driver, and has been in possession of the present owner since 1889, and according to the history given had been affected with bursattee sores upon the feet and legs during the summers since 1892. During the winters she remained sound, the sores breaking out each summer upon the advent of hot weather. The mare was overheated, which caused the disease to break out anew, and during about ten days of ex-

cessive heat in June, the disease became much aggravated and the sores rapidly extended. When presented on August 26, 1897 she showed on the outside of the right hind coronet an open sore some three inches in length and deeply excavated from the use of caustics. On the outside of the left hind pastern was a second sore 1½ inches in diameter and level with the skin, a third sore 1½ inches across and raised above the level of the skin existed upon the metacarpus. A number of old sores and old scars were present on different parts of the limbs below the carpal and tarsal joints, and it was related that several of these had appeared upon the shoulders during the previous year. The condition of the patient was so repulsive that the owner requested that she be destroyed unless decided relief could be given. A careful examination of the ulcer on the coronet showed that it extended down upon and involved the lateral cartilage of the pedal bone about ½ square inch of which was bare and necrotic. The necrotic cartilage was excised and the cavity filled with an iodoform tampon over which a bandage was firmly applied. The other sores were dressed with iodoform with firm bandages. On September 26th, the animal had so far recovered as to be fit for driving and was discharged, with direction to continue the tight bandages with iodoform when the animal was in the stable. The patient was seen from time to time and made satisfactory progress until early in October the wounds were practically healed and remained so during the following winter. On July 18, 1898, the patient was again presented with bursattee sores breaking out afresh on the right posterior coronet at the border of the old scar. This was dressed with a 1% solution of pyoktanin. On July 21st the condition of the sore had not changed, but a new one had formed on the external side of the right metacarpus three inches above the fetlock and another sore at the interior and external part of the left anterior pastern, these were penciled with nitrate of silver and dressed with iodoform ointment and pressure bandages. The groom was directed to discontinue the use of brush or comb upon the feet or legs, and to shower the parts daily for one-half hour with the stable hose. During the succeeding weeks which were very hot and wet the disease was held in abeyance and the animal constantly used. New sores occasionally developed, but each responded promptly to the general line of treatment indicated. During the intervening years up to the present time the animal has been kept in close observation and during the warm season, the feet and legs have not been groomed, but sim-

ply showered with cold water. Superficial ulcers of small size have occasionally appeared, but each has responded promptly to the pencilling with the nitrate of silver and dressing with iodoform, with pressure bandages.

These two cases demonstrated to the attending members the value of careful handling of the feet and legs in horses affected with bursattee during the summer months. It showed very well that a horse affected with this incurable disease may be made thoroughly comfortable and agreeable in every way for ordinary work. An interesting fact in connection with these cases is that both of them have grown more and more resistant as the years have gone by, so that they are less and less affected each summer, which is contrary to the general experience that they become worse each year. It is somewhat rare, in fact, that a veterinarian has the opportunity of watching two cases side by side, one for six and the other for seven years, with opportunity for frequent and close observation and at the same time has every opportunity to apply and thoroughly test a given line of treatment. Most bursattee horses change owners during the first winter after the advent of the disease, so that a given case can rarely be followed.

SURGICAL OPERATIONS.

(1) *Vaginal Ovariotomy in the Mare.*—Operator, Dr. R. C. Reed, Elmira, N. Y. Operation performed September 15.

The patient was a five-year-old bay mare, of common breed and in good general health. She was unusually disagreeable to handle in the stable, and when approached would switch her tail and urinate, and threaten to kick. Her irritability was somewhat periodical, and was apparently related to œstrum. The patient was confined in the stocks, the tail fastened to a pulley overhead and stretched tightly, and the vulva and perineal region thoroughly scrubbed with soap and water, and then washed with 1-1000 corrosive sublimate solution. The instruments were sterilized by boiling in soda solution, and the operator's hands thorough cleansed and disinfected. The sterile soda solution at about 100° was then injected into the vagina, after which with a Colin's scalpel an incision was made just above the os uteri directly forward through the balooned vagina. The stab wound thus made was enlarged sufficiently to admit the entire hand of the operator into the peritoneal cavity and the ecraseur was then carried in and each ovary in turn crushed off. The operative time occupied but a few minutes. The animal

showed no visible reaction to the operation, the appetite and general appearance seemed normal, and the temperature was unaffected. She was discharged on September 21st apparently well. On September 28th the owner reported that the patient seemed much more docile, the disagreeable actions having largely disappeared.

(2) *Castration of Cryptorchid Horse.*—Operator, R. W. McCully, V. S., New York City. Operation performed Sept. 15.

Patient a small brown horse, four years old, weighing about 950 pounds, and in thin flesh. The left testicle was in its normal position and the right was concealed. Several ineffectual attempts had been made to remove the concealed gland, which had resulted in an extensive cicatrix in the region. The animal was placed upon the operating table on his left side, chloroformed, and the right hind leg drawn upward so as to fully expose the right inguinal region. The operative area was thoroughly cleansed and disinfected, and an incision made in the scrotal region parallel to the median line, and after considerable difficulty the internal inguinal ring was reached and an opening made through the fascia immediately anterior to the ring and the testicle located, but its attachments were so short that it could not be brought out through the external ring, which made it necessary to introduce an ecraseur into the peritoneal cavity in order to remove it. When removed, the testicle had no epididymus. Apparently those who had previously operated had succeeded in getting hold of the epididymus and removed it, leaving the testicle within the abdominal cavity. This is an error which is not very rare with inexperienced operators, as the epididymus is always the first part of the organ to descend into the scrotum, and can be easily grasped and cut away, while the gland itself remains above the internal ring. In order to remove the gland it had been necessary to insert the entire hand into the abdomen, and while engaged in removing the other testis and awaiting a tampon for the large opening made, protrusion of the intestines occurred, which was promptly corrected and a tampon inserted well up toward the internal ring. At the time, some of the veterinarians present contended that the tampon would not suffice to prevent further protrusion of the intestine, while others maintained that if the tampon was sufficiently large and placed deeply enough, it would be efficient. On the following morning, September 16th, the patient was found rolling in the stable in very evident pain and perspiring freely, with all the symptoms of strangulated hernia.

Upon examination it was found that the intestines had dropped down into the scrotum alongside the tampon and lay immediately against the sutures. After thorough cleansing, the intestines were returned into the abdomen and a larger tampon introduced up to the opening through the peritoneum and retained there by sutures in the skin wound. This gave immediate relief, and the patient soon began eating, and throughout the period of observation the appetite remained good. The tampon was left in position for three days, the temperature being closely watched in the meantime, and the external wound being disinfected daily. The temperature became slightly elevated, but did not pass 103°, and the animal continued to look bright and eat well. The elevation of temperature was apparently due to infection of the sac from whence was removed the normal testicle. After the removal of the tampon both wounds were regularly disinfected and convalescence occurred regularly, and the patient was discharged on the 29th of September, fourteen days after the operation, and after having been detained for several days longer than was apparently necessary, in order to guard against any possible error. The case was of special interest because of the absence of the epididymus, and further because of the protrusion of the intestine. It is alleged by the majority of operators, that protrusion of the intestine is obviated by rupturing the abdominal wall anterior to the inguinal ring instead of operating directly through it, but this case demonstrates, so far as a single instance could, the fallacy of that theory, and shows that if a large opening had to be made through which the entire hand could pass, an intestine could readily protrude, whether the opening be through or alongside the ring. In this particular case, protrusion could have occurred, no difference whether operated upon through the ring or alongside of it, as it is absolutely necessary, owing to the character of the attachment of the testicle, to insert the entire hand. The case also showed that protrusion of the intestines can be prevented by means of a tampon when it is of sufficient size and properly placed, and equally that an insufficient tampon would not obviate the accident.

(3) *Castration of Cryptorchid Horse.*—Operator, R. E. Waters, V. S., Gravesend, Long Island. Operation performed September 16.

Patient a two-year-old bay colt with castration scars on both sides, with the history that one testicle had not been removed. One of the scars was overlooked and it was believed that the hidden

testicle was upon the right side, where, after placing the animal upon the operating table on the left side, exposing the right inguinal region and disinfecting, an opening was made under chloroform anæsthesia only to find that an error had been made as to the side. The animal was then turned to the opposite side and an opening made in the left inguinal region and the testicle removed. In this case the operation was performed directly through the internal inguinal ring. Each wound was packed up to the internal ring with iodoform gauze, and retained in position for thirty-six hours when they were removed and the wounds disinfected. The after treatment consisted of daily disinfection of the wounds with internal medication as often as suggested because of fever. The temperature rose to 104° after two days and vascillated between 102° and 104° for several days. In addition to the local treatment ½ ounce doses of quinine were administered once or twice daily as an internal antiseptic. There was considerable swelling of the scrotum and sheath, but the animal retained a fair appetite throughout, and showed no marked appearance of serious disturbance. The wounds suppurated quite freely. The patient was discharged on September 30 after being detained longer than was apparently necessary in order to guard against any accident, especially as he was to be walked home, a distance of over twenty miles.

(4) *Castration of Colt in Standing Position.*—Operator, R. E. Waters, V. S., Gravesend, Long Island. Operation performed September 16.

The subject was a one-year-old bay colt of good size and in good general condition. The operation was performed upon the colt in the standing position, being backed into the corner of a stall and the twitch applied to the upper lip. The incision was made in the ordinary manner with the Miles' castrating knife, the spermatic cord severed with an emasculator. The case progressed without incident, and left the hospital six days later.

(5) *Arytenectomy.*—Operator, Dr. H. D. Gill, New York City. Operation performed September 16.

The patient was a black draft gelding of about 1550 pounds, in good condition, and had been purchased by the present owner during the early summer, and was found to be a "roarer" after a few weeks. The animal was placed upon the operating table and turned upon his back by means of ropes attached to his feet and passed through pulleys overhead. The operation was performed without chloroform. An ordinary tracheotomy

tube was inserted in the trachea at the usual place. After the throat had been shaved and disinfected, a longitudinal incision was made down upon and into the larynx through the crico-thyroidean ligament, cricoid cartilage and first tracheal ring. A pack was then placed in the trachea above the tracheotomy tube and was retained in position by sutures. Upon spreading the larynx by means of retractors the left arytenoid cartilage was seen to be motionless during respiration, while the right moved normally. The paralyzed cartilage was isolated by means of an incision completely encircling it through the mucous and submucous tissues, including the vocal cords, the adjacent tissues carefully dissected away and the arytenoid disarticulated and removed. The larynx was then packed with a sublimated tampon and the external wound closed with a single suture. The wound was dressed daily by being sponged out with a 1–1000 corrosive sublimate solution and the parts dressed with tincture of iodine, or with iodoform-ether. The tampon was removed from the larynx and trachea on September 16. The trachea tube was removed, cleansed and replaced daily until September 24th, when it was left out, and the wound allowed to heal. The laryngeal wound was dilated and the interior of the larynx carefully examined with the aid of a reflecting lamp, and the operative wound was apparently doing properly. On October 12, the patient was discharged. So far as could be seen at that time, the operation was entirely successful, and no interruption in the process of recovery had occurred.

(6) *Arytenectomy.*—Operator, W. L. Williams, D. V. S., Ithaca. Operation performed September 16.

The patient was a bay road mare in good condition and a bad roarer. She was placed upon the operating table and anæsthetized and turned upon her back with the head extended. The operative area was shaved and disinfected, and a tracheotomy tube inserted at about the middle of the neck. The usual incision was made over the larynx and after all hæmorrhage had been controlled in the soft parts, the incision was continued through the crico-thyroidean ligament, the cricoid cartilage and the first tracheal ring; the larynx dilated by means of retractors and the left arytenoid cartilage, isolated by an incision through the mucous and submucous tissues, the adjacent parts carefully dissected away and the cartilage excised at the articulation. The hæmorrhage was controlled and the wound dressed with iodoform and tannin and left open. The

patient was dressed daily the same as the preceding and the trachea tube was removed on the 22d of September. At this time the laryngeal wound being opened, a slight necrosis of cartilage was observed at the point where the arytenoid had been excised. The necrotic portion was curetted away after which the healing progressed without further incident and the animal was discharged on October 13. So far as could be seen at that date the operation was entirely successful.

(7) *Poll Evil.*—Operators, A. H. Ide, V. S., and W. L. Williams, D. V. S. Operation performed September 17.

The patient was a small gray gelding, aged ten years, in fair condition, weighing about 1000 to 1050 pounds and badly affected with poll evil. He was confined on the operating table, and placed under complete chloroform anæsthesia. The halter was removed and the mane and foretop shaved over the entire operative area, a longitudinal incision was made on the median line of the neck beginning somewhat posterior to the diseased part and extending forward over the occipital bone down to the forehead. The incision was extended down to the ligamentum nuchæ, the ligament was separated from the surrounding tissues and severed just posterior to the diseased part by an incision directed obliquely upwards and backwards and anteriorly it was excised from the occiput immediately at its attachment, removing a section of the ligament about eight inches long. This exposed the abscess cavity fully to view, the ligament having constituted its upper wall. With Luer's bone gouge forceps, a groove was cut through the occipital crest from behind to before on the median line, about ¾ inch deep and of a similar width. The remaining attachments of the ligament to the occiput were carefully curetted away from the bone, leaving it bare. When preparing to dress the wound it was discovered that an extensive sac extended outward and downward between the occiput and the wing of the atlas to about the level of the inferior part of the articulation, that the border of the wing of the atlas was necrotic, and that the articular bursa was bare, if not open. As the operation had been confined to the median line or within an inch to either side, the cause of the opening, if such was the case, was not clear.

A counter opening for drainage was made at the lower border of the sac, and the wound cavity packed with iodoform gauze, over which the wound lips were sutured. The tampon was allowed to remain in the wound for forty-eight hours, when it was removed and the parts washed and dressed antiseptically

daily. The patient apparently did well and everything seemed to be progressing favorably except for the presence of a discharge from the left nostril. On September 23d, the animal was found lying prone upon its side and unconscious, showing all the symptoms of pressure upon the medulla. It was at once seen that the animal could live but a short time. Upon post-mortem examination the occipito-atloid articulation was filled with pus and an opening through the synovial membrane existed over the left condyle of the occiput. The left guttural pouch was filled with a reddish gray pus and while it was in close proximity to the suppurating articulation no communication between the two could be traced. A preparation of the atlas showed that bone to have been affected throughout almost its entire extent, there being at various parts traces of periostitis with the formation of new bone and at the anterior part considerable patches of necrosis in and about the joint.

(8) *Ovariotomy in a Bitch.*—Operator, W. L. Williams, D.V.S.

The patient was a full grown white bull terrier bitch which had not bred. She was placed upon the operating table on the right side with the body extended. The operative area was shaved and disinfected and an incision made in the flank immediately below the anterior tuberosity of the left ilium. No anæsthetic was used. The incision through the entire abdominal wall was made at a single stroke. The left uterine cornu was brought up by means of a finger, and the ovarian ligament ruptured by linear tension. The right cornu was then brought out and the process repeated, after which the two cornua were broken off by linear tension, with the ovaries attached. The cutaneous wound was closed by a continuous suture. The operation, after the field had been prepared, occupied probably less than three minutes and the animal apparently suffered no shock. She was taken away immediately by the owner and no subsequent report has been received.

* * *

Three other important operations remain to be reported upon at a future time. In addition there were left over without operation three cases of fistulous withers and several minor cases.

PASSAIC COUNTY VETERINARY MEDICAL ASSOCIATION.

Regular monthly meeting was held at 169 Paterson Street, Paterson, N. J., on Tuesday evening, October 6, 1903, with Dr.

Wm. Herbert Lowe, President, in the chair, the following members being present: Drs. William J. Reagan, John H. Degraw, Wm. Herbert Lowe, and Wm. H. H. Doty, Paterson; Wm. J. Fredericks, Delawanna. Dr. Pope telephoned his regret at not being able to be present. Dr. J. Payne Lowe did likewise.

Minutes read of annual meeting and approved as read.

Dr. Wm. Herbert Lowe has undertaken the work of eradicating glanders from the State on the authority of the State Board of Health, and asks for the earnest coöperation of every practitioner. He reported that he had had watering troughs and drinking fountains for horses closed in Paterson, Passaic, Newark, Jersey City, Bayonne and other places in the infected districts. He spoke of the importance of proper disinfection of infected stables, blacksmith shops and hotel and road-house sheds. If all cases were reported to the State Board of Health the disease could soon be restricted and brought under control.

Dr. Degraw expressed the fear of assignment of reading of papers, as certain members had kept away from the meeting, and said if such members did not want to read papers, or were not prepared to do so, they need not stay away from the meeting.

President Lowe reported that he had George Locke, of Flemington, Hunterdon County, arrested for practicing veterinary medicine without a license; and that the grand jury of that county had indicted him for violating the law. Locke first pleaded "not guilty" before the court; later he retracted his plea and entered one of "non vault." Sentence has not as yet been pronounced by the court. The penalty for practicing veterinary medicine without a license is a fine of not less than one hundred dollars or imprisonment in the county jail for a period not less than thirty days, either or both, at the discretion of the court. So that George Locke is at the mercy of the court. "Dr." Sample, of Monmouth County, has already served five months in the Freehold penitentiary for practicing veterinary medicine without a license, as required by Chapter 18, Laws of 1902.

It was decided to send suitable cases to the next meeting for clinical demonstration.

This association was represented at the State meeting at Athenia, July 9, 1903, by Dr. R. O. Hasbrouck, Dr. Wm. J. Fredericks, Dr. George W. Pope, Dr. W. C. Ferguson, Dr. J. H. Degraw, Dr. T. J. Cooper, Dr. W. J. Reagan, Dr. John Kehoe,

Dr. Wm. Herbert Lowe, Dr. J. Payne Lowe, and Dr. Wm. H. Lowe, Jr.

On motion, the meeting adjourned at 10.15 P. M.

DR. WM. J. FREDERICKS, *Secretary.*

AMERICAN VETERINARY MEDICAL ASSOCIATION.

President Bell has made the following appointments:

RESIDENT STATE SECRETARIES—1903-04.

Alabama—A. Gibson, 412 N. 20th St., Birmingham.

Arizona and New Mexico—J. C. Norton, Phœnix.

Arkansas—R. R. Dinwiddie, Fayetteville.

British Columbia—Johnson Gibbins, 1003 Granville St., Vancouver.

California—Archibald R. Ward, Berkeley.

Colorado and Utah—George H. Glover, Fort Collins, Col.

Connecticut—Thomas Bland, Waterbury.

Delaware—H. P. Eves, 507 W. 9th St., Wilmington.

District of Columbia—J. W. Fink, Department of Agriculture, Washington.

Florida—J. G. Hill, 324 Forsythe St., Jacksonville.

Hawaiian Islands—W. T. Monsarrat, Honolulu.

Illinois—E. L. Quitman, 489 Jackson Boulevard, Chicago.

Indiana—J. O. Greeson, Kokomo.

Iowa—Hal. C. Simpson, Denison.

Kansas—N. S. Mayo, Manhattan.

Kentucky—D. A. Piatt, 19 W. Short St., Lexington.

Louisiana—Joseph L. Drexler, Thibodaux.

Maine—A. Joly, Waterville.

Manitoba—F. Torrance, Winnipeg.

Maryland—W. H. Martenet, 1005 W. North Ave., Baltimore.

Massachusetts—Benj. D. Pierce, 27 Sanford St., Springfield.

Michigan—G. W. Dunphy, Quincy.

Minnesota—J. G. Annand, 414 First Ave., S. E., Minneapolis.

Mississippi—E. M. Ranck, Natchez.

Missouri—T. B. Pote, 4046 Cottage Ave., St. Louis.

Montana—M. E. Knowles, Helena.

Nebraska—A. T. Peters, Lincoln.

New Hampshire—Lemuel Pope, Jr., 101 State St., Portsmouth.

New Jersey—Thomas E. Smith, 309 Barrow St., Jersey City.

New York—Wm. Henry Kelly, 233 Western Ave., Albany.
Nevada and Idaho—J. Otis Jacobs, Reno, Nev.
North Carolina—A. S. Wheeler, Biltmore.
North Dakota—L. Van Es, Fargo.
North West Territory—Jno. F. Burnett, Fort McLeod.
Nova Scotia—Wm. Jakeman, Halifax.
Ohio—H. Fulstow, Norwalk.
Ontario—John W. Grover, Hamilton.
Oregon—Wm. McLean, 328 Fourth St., Portland.
Pennsylvania—C. J. Marshall, 2004 Pine St., Philadelphia.
Quebec—A. A. Etienne, St. Hyacinthe.
Rhode Island—Thos. E. Robinson, 65 Main St., Westerly.
South Carolina and Georgia—G. E. Nesom, Clemson College.
South Dakota—E. L. Moore, Brookings.
Tennessee—George R. White, Nashville.
Texas—H. D. Paxson, Fort Worth.
Virginia—John Spencer, Blacksburg.
Washington—James Bullivant, Spokane.
West Virginia—F. P. Ruhl, Fairmount.
Wisconsin—Charles Schmitt, Dodgeville.

Dr. Archibald R. Ward, of Berkeley, California, has been added to the Committee on Diseases, the Committee now representing almost every section of North America—Canada, New England, South, Middle West, and Extreme West.

MASSACHUSETTS VETERINARY ASSOCIATION.

The regular meeting of this Association was held at the Boston Veterinary Hospital, Wednesday evening, Sept. 23d, at 8 P. M. The regular routine business was transacted and in addition a very interesting report on the doings of the American Veterinary Medical Association at Ottawa, Can., was rendered by Dr. Winchester, assisted by Drs. Beckett, Howard, Pierce and Winslow.

F. J. BABBITT, *Secretary.*

"I RECEIVE great pleasure and valuable information out of each number of the REVIEW, and it 'gets better every year,' as the Dutchman told his wife."—(*W. C. Hanawalt, D. V. S., Sheffield, Ill.*)

"OUR ANIMAL FRIENDS," published by the American Society for the Prevention of Cruelty to Animals, appeared in a new form for its September number, being now in magazine shape, splendidly printed, and nicely edited and illustrated.

NEWS AND ITEMS.

THREE women are practicing veterinary medicine in England and Wales.

DR. C. E. BURCHSTED, M. D. V., has removed from Exeter to Concord, N. H.

DR. ROBERT A. PHILLIPS, of Plaquemine, La., was married to Miss Elise Daigre, on Thursday, Oct. 15.

DR. WALTER SORREL (K. C. V. C., '03) has been appointed meat inspector and stationed in the Philippines.

THE annual announcement of the Ontario Veterinary College for the session of 1903-04 has been received.

DR. GUY A. ROBERTS (K. C. V. C., '03) has been appointed. assistant to State Veterinarian Butler, of North Carolina.

DR. THEODORE S. RICH, Inspector B. A. I., has been transferred to the Quarantine Division and stationed at Trinidad, Colorado.

DR. E. J. CREELEY, of San Francisco, Cal., was appointed a member of the California State Board of Veterinarians by Gov. Pardee on Aug. 14.

MRS. DR. T. EARLE BUDD, of Orange, N. J., has been elected a member of the literary department of the Woman's Club of the Oranges—the swell club of the Oranges.

DR. T. J. COOPER, veterinarian, of Paterson, N. J., is the inventor of a punctureless and non-collapsible pneumatic tire that can be used on any vehicle. Dr. Cooper's pneumatic tire is said to be superior to any tire now on the market.

DR. JOHN J. MILLAR, of Chicago, Ill., has purchased the practice of Dr. L. W. Young, of 459 East Division Street, Chicago. Dr. Young has gone to Southern California for the benefit of his health, which has been amiss for sometime.

DR. W. H. DALRYMPLE, Louisiana State University and Experiment Station, delivered an address before the Assumption Agricultural and Industrial Association, at Napoleonville, La., Sept. 5, on "A Few Thoughts on the Feed Question."

DR. WM. H. PENDRY, of Brooklyn, N. Y., has sustained a sad bereavement in the death of his estimable wife, Alice, which occurred on the 5th ult., after a lingering illness. They have one son, Bryer H., a practieing veterinarian and food inspector of Brooklyn.

IN the absence of a regularly manufactured wound retractor a very satisfactory impromptu one can be made by bending the handle of a table spoon or if a sharp one is desired the tines of

a table fork bent at right angles will prove an efficient instrument.—(*L. A. Merillat, M. D. C., Chicago.*)

No Diploma Necessary to Enter the Medical Corps of the Army or Navy.—It is said that no diploma is required from candidates for positions in the medical department of either the army or navy, nor any certificate that any prescribed number of sessions has been passed in study. The examinations are so severe that there is no possible chance of any one slipping through who has not been a diligent student for at least the usual four years' study. The army and navy being under the jurisdiction of the Federal Government, naturally the well-known State regulations do not hold.—(*New York Medical Journal.*

In suturing wounds of the skin care must be taken to bring the raw surfaces together. It is a mistake to close a wound with infolding edges, as healing will never take place promptly under such circumstances. . . . The value of button suture in veterinary patients should not be underestimated. A row of buttons applied with deep connecting sutures supplemented with the ordinary interrupted sutures gives the best satisfaction in the majority of accidental wounds of the horse. Friction of the edges of the wound and tension from swelling are thus prevented from tearing the wound apart until healing has taken place.—(*Dr. L. A. Merillat in Chicago, Vet. Col. Quarterly Bulletin.*)

The Oxygen Treatment for Parturient Paresis.—Dr. F. F. Moyle, Waterford, Wis., writes under date of Oct. 10:—"I note in the July Review the remarkably successful results in the hands of Drs. Tennent and Barnes from the use of oxygen in the treatment of parturient paresis. I sent to Truax, Greene & Co., Chicago, and got a 40-gallon tank of oxygen, and have treated twelve cases, with one death. All of these cases were attacked in the first twenty-four hours after calving. While I think the treatment is nearer the ideal than the Schmidt method, I cannot record such wonderful results as Drs. Tennent and Barnes. My cases got on their feet in from twelve to twenty-four hours; but most of them seemed to need a nerve tonic to complete the cure, seeming to have a loss of appetite, for which I left strychnia sulph., gr. viij; tincture belladonna, ℥ij; nitrous ether, ℥ij. Mix, and give in four doses, every three hours, after they get up. One reason, and a very important one, in favor of the oxygen treatment, is that there is very little danger of bag infection."

VETERINARY MEDICAL ASSOCIATION MEETINGS.

In the accompanying table will be found the dates, places of meeting, and Secretaries' names and addresses of all the Veterinary Medical Associations of the United States and Canada, so far as obtainable by the REVIEW. Secretaries are urgently requested to see that the organizations which they represent respectively are included in the list, and that the details concerning them are properly stated. We shall be glad to receive notification of errors of commission and omission, to the end of making this department absolutely without fault, and thus a great help to the profession and the cause of veterinary science.

Name of Organization.	Date of Next Meeting.	Place of Meeting	Name and Address Secretary.
American V. M. Ass'n.....	August, 1904.	.....	J. J. Repp 5249 Addison St., Phila., Pa.
Vet. Med. Ass'n of N. J	Jan. 9, 1904.	Trenton.	G. W. Pope, Athenia, N. J.
Connecticut V. M. Ass'n.....	.....	.....	B. K. Dow, Willimantic.
New York S. V. M. Soc'y...	September, 1904	Brooklyn.	W. H. Kelly, Albany, N.Y.
Schuylkill Valley V. M. A....	3d Wednesday in December.	Reading.	W. G. Huyett, Wernersville, Pa.
Passaic Co. V. M. Ass'n.....	1st Tuesday of each month.	Paterson, N.J	W. G. Fredericks, Delawanna, N. J.
Texas V. M. Ass'n.....	Call Ex. Com.	.....	H. D. Paxson, Ft. Worth.
Massachusetts Vet. Ass'n.....	Monthly.	Boston.	F. J. Babbitt, Lynn, Mass.
Maine Vet Med Ass'n.....	.....	.....	C. L. Blakely.
Iowa-Nebraska S. V. M. Ass'n.	.....	.....	.....
Central Canada V. Ass'n.....	.....	Ottawa.	C. H. Higgins, Ottawa, Can.
Michigan State V. M. Ass'n...	Feb. 2, 1904.	Lansing	Judson Black, Richmond.
Alumni Ass'n N. Y.-A. V. C..	April, 1904.	141 W. 54th St	F. R. Hanson, N Y. City.
Illinois State V. M. Ass'n.....	Dec. 2 and 3, '03	Sherman H'se, Chicago.	W. H. Welch, Lexington, Ill
Wisconsin Soc. Vet. Grad.....	Call of Pres't.	Racine.	S Beattie.
Illinois V. M. and Surg. A....	.....	.....	W. A Swain, Mt. Pulaski, Ill
Vet. Ass'n of Manitoba	.....	.....	F. Torrance, Winnipeg.
North Carolina V. M. Ass'n...	.....	.....	J. W. Petty, Greensboro.
Ontario Vet. Ass'n.....	.....	.....	C H. Sweetapple, Toronto, Can.
V. M. Ass'n New York Co....	1st Wednesday of each month.	141 W. 54th St	C. E. Clayton, N. Y. City.
Ohio State V. M. Ass'n.....	.....	.....	W. H. Gribble, Washington C. H.
Western Penn. V. M. Ass'n...	1st Wednesday of each month.	Pittsburgh.	F. Weitzel, 100 Parkway, Allegheny.
Missouri Vet. Med. Ass'n.....	1904	Call of Officers	B F. Kaupp, Kansas City.
Genesee Valley V. M. Ass'n...	.....	.....	W. E. Stocking, Medina, N. Y.
Iowa State V. M. Ass'n.....	Call of Pres't	Des Moines.	H. C. Simpson, Denison, Ia.
Minnesota State V. M. Ass'n	Jan. 21, 1904.	St. Paul.	J. S. Butler, Minneapolis.
Pennsylvania State V. M. A...	March, 1904.	Philadelphia.	C. J. Marshall, 2004 Pine St., Phila.
Keystone V. M. Ass'n.....	2d Tuesday of each month.	Philadelphia.	C. J. Marshall, 2004 Pine St., Phila
Colorado State V. M. Ass'n..	.....	.....	M. J. Woodliffe, Denver.
Missouri Valley V. Ass'n.....	.....	Kansas City.	B. F. Kaupp, Kansas City.
Rhode Island V. M Ass'n....	January, 1904.	Providence.	T.E.Robinson, Westerly, R I

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IN the August number of the REVIEW, we called attention through this department to a little pamphlet that was issued by the Denver Chemical Mfg. Co., covering the indications for the employment of "Antiphlogistine" in veterinary practice, and advised all those who had not already received a copy of it, to write the company for one. How many took advantage of the offer we do not know, but we do know that every up-to-date veterinarian is taking advantage of this excellent product to combat inflammation, it matters not where it exists, and that its field is continually becoming broader. We mention this, merely that the *few* who have *not* tried it, and there are always those with every product), may benefit by the experience of the *many* who have.

"TALLIANINE," a product used to combat diseases of the chest, debilitating diseases, lock-jaw, etc., already extensively used on the continent of Europe, is attracting considerable attention among American veterinarians. Sykes & Street, the sole agents for the United States, whose advertisement appears on page 17 (ad. dept.), will furnish literature, on application; also complete records of cases treated in Europe, and are now compiling records of cases treated with this product by American veterinarians. Write them.

ON page 22 (ad. dept.) we would call attention to a modest little advertisement situated in the centre of the lower half of the page, in which one of our French colleagues seeks a market for his PURE OLIVE OIL, and desires some American brother to represent him here. We direct attention to this advertisement, lest Mr. Niel has not made himself quite plain, and because correspondence with him might mutually benefit him and the American veterinarian who might seek to open up a market for his product in America.

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